

JPRS-UEA-84-011

8 May 1984

USSR Report

ECONOMIC AFFAIRS

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USSR REPORT ECONOMIC AFFAIRS

CONTENTS

ECONOMIC POLICY, ORGANIZATION AND MANAGEMENT

- Problems Dealing With Distribution Relationships Examined
(Grebennikov, V.G. et al.; EKONOMIKA I MATEMATICHESKIYE METODY,
No 1, Jan-Feb 84) 1

INVESTMENT, PRICES, BUDGET AND FINANCE

- Experiment Instructions for Profit Paid to State Budget
(EKONOMICHESTKAYA GAZETA, No 14, Apr 84) 14

RESOURCE UTILIZATION AND SUPPLY

- To Avoid Long Hauls, More Intrarepublic Subcontracting Urged
(V. Bayerunas; MATERIAL'NO-TEKHNICHESKOYE SNABZHENIYE,
No 1, Jan 84) 25

ECONOMIC MODELING AND COMPUTER TECHNOLOGY APPLICATION

- Fedorenko Reviews Economic Modeling Development
(N.P. Fedorenko; EKONOMIKA I MATEMATICHESKIYE METODY, No 1,
Jan-Feb 84) 31

- Mathematical Forecasting, Plan Modeling Discussed
(Yulo Ennuste; IZVESTIYA AKADEMII NAUK ESTONSKOY SSR:
OBSHCHESTVENNIYE NAUKI, No 1, 1984) 44

REGIONAL DEVELOPMENT

- Moldavia's Function as Integral Part of Soviet Economy Viewed
(A. Kozhukhar'; KOMMUNIST MOLDAVII, No 12, Dec 83) 52

ECONOMIC POLICY, ORGANIZATION AND MANAGEMENT

PROBLEMS DEALING WITH DISTRIBUTION RELATIONSHIPS EXAMINED

Moscow EKONOMIKA I MATEMATICHESKIYE METODY in Russian No 1, Jan-Feb 84
pp 168-177

[Article by Grebennikov, V.G., Pchelintsev, O.S. and Shatalin, S.S., Moscow:
"Pertinent Problems of Improving Socialist Distribution Relationships"]

[Text] The study of distribution relationships in a system of optimal functioning of the socialist economy continues to be one of the most important tasks of our economic science. It has been pointed out in a number of works that the basic parameters of these relationships (proportion between the wage fund and public consumption funds, level of social protection and motivation of worker in their relation to assessments of labor resources and pay for them and others) are not derived from a model of optimal functioning of the economic system with the same ease as, for example, economic assessment of different kinds of resources.

Naturally, some elements of the analysis of distribution connected particularly with a formalized evaluation and selection of plan variants with the use of Pareto's rule and its various modifications deserve attention and further development, but they cannot replace a unitary conception of optimal formation of distribution relations, the need for which is increasingly clearly felt at the present stage of development of our economic science.

This need is determined by a whole series of factors.

First of all by the practical significance of distribution relationships as an instrument of getting the produced income and product to the immediate consumer. The general level of the people's well-being obviously depends on the effective organization of these relationships. And in this sense, as pointed out by Comrade Yu.V. Andropov, "...distribution relationships plainly and directly affect the interests of each and all" (Andropov, Yu.V., "Karl Marx's Teaching and Certain Questions of Socialist Construction in the USSR."--KOMMUNIST, No 3, 1983, p 15).

An increasingly larger role is played by the indirect effect of distribution relationships connected with the reflection and taking account in them of objective factors of "social equalization": level of satisfaction of the

population with the same volume of production and income can sharply differ depending on the "quality" of distribution and the degree of its correspondence to the criterion of fairness accepted in the given society.

Connected with this is the reaction of distribution relationships to labor and social activity and thus to production effectiveness. Consideration of this effect and mastery through feedback mechanisms of distribution relationships and labor activity create one of the current tasks of economic science and economic practice.

The need for a special investigation of the said aspects of distribution problems is dictated by the objective situation in this sphere.

Reference is made not only to the fact that the basic mechanisms and functional forms of distribution were formed among us back in the period of the '30s-'50s and were naturally aimed at the solution of other than today's problems with a much lower level of well-being and with a different social structure of society. We have in mind the extensive approach to the development of these mechanisms designated in particular in the period after the economic reform of 1965, when the place of an active search for new institutional forms of distribution was taken by a little controlled development of all kinds of bonus payments, diversity of departmental channels of distribution and various processes and structures, which in certain measure resulted in occurrences of imbalance in the sphere of realization of monetary income, while at the same time not ensuring the necessary growth of labor activity and general production efficiency.

A serious defect was the lag of collective forms of incentive pay for labor. The orientation of pay toward forms of primarily individual piecework renders more difficult the attainment of an agreement of the interests of an individual worker with the interests of the enterprise and restrains processes of formation of an economic self-consciousness and more developed forms of collective labor ethics.

It is now necessary to bring concrete distribution relationships into accord with their objective content and the establishment of a closer relation of individual income to the direct operational results of a given labor collective. This forms in our view the necessary direction of effective realization of the functions of a socialist enterprise in conformity with the Law on Labor Collectives (PRAVDA, 19 June 1983).

The conception of optimal functioning of the socialist economy makes it possible, it seems to us, to improve the approach to the determination of the fundamental proportion of distribution--the relationship between the required and surplus product. From our point of view (for greater detail see (1)), the required product under the conditions of socialism is equal to the total volume of benefits and services expended for the use of the population. It follows from this that the determination of an objective limit of the required product under socialism from a theoretical and methodological point of view is equivalent to the problem of an optimal relationship between consumption and accumulation funds in the national income. At the same time, in conformity

with the requirement of a fundamental economic law of socialist society, the size of the required products (in its integral expression taken over a sufficiently large period of time) serves as that criterion with which the optimal line of demarcation is determined between the required and surplus product for each given period of time, say, the current year.

Optimization of the relation between the required and surplus product is provided by the most general limits within which consumption of the population and aggregate income are formed. A theoretically more complex problem that would be hardly susceptible to a strict formulation of the problem as an optimum is distribution of the required product among the wage fund and public consumption funds. A theoretical and methodological analysis of this problem and working out of scientifically based proposals for the establishment of respective proportions first of all requires the solution of general questions of the relationship of economic and social factors in the social-economic system of developed socialism.

In our article: "On Improving the System of Distribution Relationships in the Socialist Economy," it was emphasized: "The scientific method of analysis of distribution relationships developed by K. Marx thus organically unites in itself aspects of 'social' and the strictly 'economic,' in whose fruitless opposition bourgeois conceptions of distribution evolved" (2, p 18).

This position, however, requires today greater concretization. The nature of interacting economic and social factors does not permit their mechanical combination, their role remains different, which of necessity must be reflected in the practice of planned management of socialist economy, including the system of distribution.

That which is called "social factors" of planned economic decisions forms in point of fact the purposeful, normative aspect of functioning of the social system, not subject to the logic of replacement, scalarization [skalyarizatsiya] and maximization of the integral effect presented in monetary form. On the other hand, there is associated with the term "economic factors" the instrumental aspect of social relations, the logic of optimal utilization of resources for the attainment of set social aims and comparison of alternatives on the basis of an integral momentary criterion.

In this sense, social factors should be considered as limitations (in the broadest possible sense) determining the field of selection, which is done on the basis of purely economic criteria. This principle of clear differentiation of the social and economic aspects of purposeful selection in the guidance of social-economic systems has been made the basis of working out at the present time of a complex method of evaluating the effectiveness of economic measures. It also has a direct relation to improvement of distribution relationships turning into a problem of differentiation of the social and economic criteria of formation of the income of each member of society.

In this connection, let us dwell on the idea of a socially guaranteed minimum in distribution discussed by us and a number of other Soviet economists and sociologists since the beginning of the '70s (3-5).

The task of providing a guaranteed minimum of living conditions means first of all that socialist society is interested in having a number of most important social needs (housing, health care, education, culture) satisfied on a scale that would provide conditions for the normal development of each of its members regardless of individual labor contribution. This task also means that the aggregate real income of every member of society without exception must not be below a certain amount, which is ensured by the distribution policy and is consistently raised with the development of society's economic potential. Such a figure may be called guaranteed minimum income.

It should be emphasized that the guaranteed minimum income is only one element of the system of socialist distribution providing through the specific means of state social policy (pensions, grants, free services and benefits from public consumption funds--OFP [public consumption funds], guaranteed minimum wage) only the lowest level of satisfaction of different needs. The standard of living provided by it should not be considered as being possible for some significant portion of the population and even more so as a social norm. The task of the distribution system as a whole is to provide each member of society with a diversity of possibilities for maintaining its aggregate real income at a sufficiently high level, exceeding, as a rule, the minimum. A part of these possibilities is provided by access to OFP, a part by maintenance of appropriate wage norms and regulation of income from a private farm and policy of retail prices. In this sense the whole system of distribution is a system of social guarantees determining conditions of access to the source of living means.

But it is natural that with limited resources of consumption in each period of time all these diverse possibilities of obtaining an income cannot be provided by society in identical degree and form. The higher the income, the more "conditional" is the social guarantee of obtaining it--say, the higher the requirements for a skill, the ability to withstand physical stress or for the resolve to assume responsibility. Consequently, not every possibility provided by the distribution system is a real possibility for a specific individual.

The guaranteed minimum income granted to members of society regardless of their labor contribution provides that regardless of what individual circumstances or deviations from the average norm the real income does not drop below a certain limit, in other words, it is computed for the exception rather than for the rule.

Socialist distribution presupposes a differentiated approach to the socially guaranteed level of satisfaction of different requirements. In practice, it is achieved by the fact that the most important needs in a social sense whose satisfaction society considers necessary at an adequately high level for all its members are provided through the means of public consumption funds in the form of free (or only partially paid) benefits and services. The social guarantee of satisfaction of needs thus acquires a concrete purposeful character and ensures individual consumption at the level of a social norm accessible to all. But namely for this reason specified payments from public consumption funds exceed the limits of the actually guaranteed minimum income.

Thus the term "socially guaranteed minimum of living benefits" should not be identified with the subsistence minimum, the "physiological" limit of the income level and the like. For different needs, it acquires a different significance and indicates significantly different quantitative limits. Thus we again emphasize that in the sphere of education and health care, the object of social guarantee should be practically the entire range of rendered services. In this sense apparently the choice of the term "minimum" in previously published works on this question was not quite successful; it would be better to speak of a socially guaranteed living standard. The main consideration in this term is the line of demarcation between consumption, unconditionally guaranteed by socialist society (that is, guaranteed to its members regardless of their labor contribution and on the basis of purely social criteria), and consumption whose measure is determined by society on the basis of the objective requirements of the law of distribution on the basis of labor.

From the said concept, there stems, first, the need of consistent implementation of the principle in accordance with which no one can obtain additional advantages in the use of public consumption funds. (What has been said does not contradict the need of differentiation of the level of the socially guaranteed standard depending on the region where one lives and other objective factors). The right to living benefits exceeding those guaranteed by society and a freely granted standard, for example, additional living space, services with additional comfort and the like, a person can acquire for earned money, that is, on a universally obligatory paid basis. This right must be granted to everyone with the development of various forms of paid services and the use of the population's funds for the financing of nonproductive capital investment.

It should be kept in mind that social security and in general any form of free allotment from state funds is none other than a possibility granted by society, one of the variants of satisfaction of needs which should not hinder the aspiration of people for living benefits on the basis of personal (labor) achievements and personal responsibility. In other words, the existence of public consumption funds as a chief source of a guaranteed social standard is intended to expand many alternatives at the disposal of each member of society and not to restrict him. For this reason, economic differences in particular between variants of "public consumption funds" and a "personal labor income" as alternative sources of satisfaction of individual needs should not be excessively great (as in the case of availability to the consumer of completely free state housing or completely paid cooperative apartments). The transition from one method to another should be organized with the least possible limitations and in the most diverse forms.

Second, it is necessary to consistently overcome the existing practice of using public consumption funds as an instrument of material motivation, on the one hand, and of wages as a means of solving purely social problems, on the other. The mechanism of payment on the basis for labor should be in principle concentrated on the second most important social-economic function of income distribution--the function of stimulating labor activity and raising the economic accountability of workers for the results of labor.

In particular, this calls in question existing ideas on the practicability of providing a social living standard through raising the guaranteed wage minimum.

Inasmuch as wages perform the economic function of an aggregate income, the wage minimum in a socialist economy must likewise reflect only economic factors. To link, for example, the minimum wage level with a minimum living standard required for the reproduction of a simple, unskilled work force means to attribute to it the fulfillment of social functions that should be the exclusive prerogative of public consumption funds.

The economic function of pay according to labor links it in principle with effectiveness of use of labor resources in the national economy. As we know, the question of this effectiveness is resolved in a most general setting on the basis of determination of assessments of labor resources in an optimal plan of development of the socialist economy reflecting the contribution of augmentation of different categories of labor into an augmentation of the national-economic criterion of optimality of its functioning. Naturally, it does not at all follow from this general formulation that remuneration of labor is identified with its assessment in an optimal national-economic plan. Factors determining the individual effectiveness of labor and together with it the individual remuneration of an individual worker (including the effects of collective organization of labor) are significantly more diverse in comparison with factors determining the conditions of optimal use of more or less mass categories of labor for which it only makes sense in practice to determine an economic evaluation.

The macrolevel is something else. On it are also formed such most important indicators as the average wage of workers and the economic evaluation of a unit of labor resources as a whole. The comparison of the dynamics of these figures makes it possible to make a judgement to what extent growth of the average wage reflects increased effectiveness in the utilization of labor and its contribution to the growth of the national-economic criterion of optimality.

As the calculations we have made show (the scope of a journal article does not permit depicting them in detail), growth of the aggregate economic evaluation of a unit of labor resources over the course of the last two five-year plans has lagged behind growth of the average wage. This may be considered as an important indicator of the inadequacy of the existing mechanism of pay according to labor from the point of view of its fulfillment of the above-indicated economic function of income distribution.

The directions of improvement of distribution relationships should be considered in close connection with present problems and long-term tasks of development of the entire economic mechanism of the socialist economy. In analyzing certain negative tendencies in the sphere of distribution (elements of inequality of access to public consumption funds, "vyvodilovka" and the like), it should not be forgotten that their chief source lies in the serious defects of our economic mechanism and the presence in it of forces and conditions realistically reproducing the indicated phenomena.

We have in mind first of all bureaucracy as a social-economic phenomenon characterizing one of the specific forms of manifestation of property relationships formed at the stage of extensive growth of the socialist economy. Bureaucracy is manifested in a rigid allocation to ministries and departments of the great mass of production resources of society in the presence of inadequate economic power of other social centers for handling of resources. Of the three types of such centers whose balanced interaction constitutes an important objective condition of effective functioning of the social-economic system as a whole--sectors, regions, comprehensive goal programs--the first type has acquired significant preference.

The development of the sectorial system in its existing form has led in particular to excessive expansion of the social functions of ministries and departments. Their operation today encompasses such spheres remote from production as construction and the maintenance of housing, children's institutions, municipal and cultural-consumer services and city transport facilities on a scale constituting a significant share of all-union outlays for corresponding needs. Departmental fragmentation of the items of the social infrastructure leads to low effectiveness of utilization of resources of the nonproduction sphere. A gap exists between the resource availability of "rich" ministries and departments primarily responsible for the solution of production tasks and first of all subordinating to these problems their work in the social sphere and local administrative organs that are responsible for the integrated social development of a given region. Significant interdepartmental differences in funds allocated for social needs give rise to an unjustified differentiation of the conditions and levels of life within individual regions and settlements.

Only a redistribution of funds spent on social needs for the benefit of regional administrative organs is capable from our point of view of creating a basis for the rational attainment of the basic goals of social policy. On this basis, a differentiation of wages and provision of benefits for collective use among sectors and enterprises will acquire sufficiently clear social limits and produce an economic effect.

The main danger of departmental monopoly is that it gives rise to the domination of production criteria over social and ecological ones in the adoption of economic decisions and of producers over consumers. This fundamental defect of bureaucracy cannot be overcome through the development of intersectorial forms of administration of the type of councils of directors created in cities or at regional production complexes. It is not only and not so much departmental fragmentation (which most frequently is referred to as the chief defect of the sectorial system of administration) but the uniformity and one-sidedness of the criteria inherent in the components of the sectorial system which hinders an integrated solution of social-economic problems. And for this reason, it is not only and not so much the overcoming of departmental fragmentation through forms of intersectorial cooperation but first and foremost strengthening of the position of regional and program administrative organs, including the significant expansion of their resource base and sphere of authority that should be considered as the chief direction of improvement of the system of administration as a whole.

Under conditions of socialism, in addition to increasing the size of national wealth, the most important problem is retention and strengthening of the social quality of socialist property--its labor base. We have in mind the fact that active participation in socially useful labor in the able-bodied stage of the life cycle is a necessary and sufficient condition of including each member of society in regard to the distribution of the means of production and production benefits and services for personal use.

The labor base of socialist property cannot be reduced to distribution according to labor and even more to particular manifestations of the given principle in the concrete forms and methods of motivation. It is determined by the certainty of participation of all able-bodied citizens in public production as the universal basis of a comprehensive system of social guarantees. Guaranteeing of the measure of labor on the part of each worker in combination with a guaranteed measure of consumption on the part of society forms a most important content of processes ensuring reproduction and development of the labor basis of socialist property.

A number of problems arise in this development requiring comprehensive analysis of their causes and consequences. Strengthening of the labor base of socialist property presupposes not only the elimination of nonlabor income in its true sense (speculation, theft, official abuses) but also the overcoming of deliberate understating of the measure of labor in the case of a given, fixed remuneration and the desire of a part of the workers to give less and secure more from society, which from the social point of view differs in no way from the practice of obtaining nonlabor income.

In analysis of the causes of the indicated negative phenomena and tendencies, chief attention is paid to defects of the existing system of remuneration of labor. For the improvement of this system, the chief ways of solving pressing problems in this sphere are sought. Despite its great importance, it is necessary to underscore that the main reserves for increasing labor activity and strengthening of the attitude toward labor today exist deeper in the social-economic mechanization of formation of an active, interested attitude toward socialist property in which the moral value of responsibility forces into the background indirect benefits of appropriation.

Actual distribution on the basis of labor forms only a part of the system of social guaranteeing of the measure of labor and the measure of consumption ensuring a rise in the people's well-being through the increase of socialist property. Distribution on the basis of labor is effective only to the extent that it is based on something deeper than indirect material stimuli, motives and social factors of inclusion in social labor. As Comrade Yu.V. Andropov emphasis: "...It is important not only that good labor is well rewarded and receives worthwhile social recognition. It is necessary that the practice of material and moral rewards in combination with exemplary organization of labor supports and develops in people the consciousness of usefulness and need for their efforts and the products they put out. For it to establish finally the sense of their coparticipation in the affairs and plans of the whole collective and all the people. And this feeling mobilizes and disciplines more than any agreements and appeals" (Andropov, Yu.V., "The Teaching of Karl Marx and Certain Questions of Socialist Construction in the USSR."--KOMMUNIST, No 3, 1983, p 15).

The central place in the system of stimuli of labor activity under socialism should be occupied by the feeling of being owner. This means that its growth, other conditions being equal, is determined by the effectiveness of participation of workers in management, that is, through the development of collective forms of labor and production organization and growth of the role of collective interests in the socialist economy. A departure in significant measure is necessary from the obsolete form of individual inclusion in social labor and corresponding to it individual piecework and the development of collective forms of remuneration of labor based on a real participation of workers in management. Only on this basis, with the hands of the worker collective can effective differentiation of wages regulated by socialist society as a whole be achieved.

A serious influence on the whole problem of improvement of distribution relationships is exerted by the specific nature of the present stage of development of our country as a stage of intensification of public production.

The carrying out of socially, culturally and ecologically balanced intensification is a necessary basis of further improvement of the socialist system of developed socialism and its gradual transformation into a society of the communist type. At the same time, intensification of social processes on the basis of increased diversity of the conditions of individual development, expansion of the forms of collective activity and participation of the masses in management constitutes an important condition of the transition of the economy to the path of intensive development.

Intensification of public production raises with special acuteness not only the problem of balancing the structure of sectors of the national economy, supply and demand in the consumer sector of the economy and so on. It requires that the structural balance of the national economy be reinforced with the social-economic and institutional structure on the basis of development of various forms of interaction of nationwide, collective and individual interests.

Current imperatives of intensification have a most direct relation to income distribution. In addition to strengthening of the system of social guarantees, measures aimed at strengthening the influence of distribution relationships on the rationalization of all economic life acquire a special significance. This presupposes in particular the operation of more rigid economic criteria of formation of that part of the income which is distributed over and above the socially guaranteed standard.

The main problem here is the effect of distribution on increasing the economic responsibility of workers and labor collectives. Up to the present time, in a discussion of the problem of improvement of pay on the basis of labor, the predominating theme has been motivation of labor activity. Significantly less attention has been paid to economic responsibility, which is apparently to be explained by the fact that these two problems simply become identified. In reality, the functions of motivation and strengthening of economic responsibility are significantly different. The methods and forms of their implementation are just as different (although, of course, interrelated).

actually regulating the result aspects of workers' participation in production work calls for further spread of the brigade contract. Introduction of the practice of concluding contracts for overtime work and voluntary-assistance work would operate along the same lines.

It is very important that the development of contractual relationships in this sphere fulfill a part of the general task now being resolved of transforming obligations stemming from contracts into the principal criterion for assessing the effectiveness of managerial activity on which the whole system of material stimuli of the socialist economy must be based.

It goes without saying that the traditional aspects of contractual relationships in the sphere of labor also require serious improvement. We have in mind the development of mechanisms of release and redistribution of workers and the attainment of effective full employment of the population under the conditions of intensification. From our point of view, this requires in particular the release of management of associations, enterprises and institutions from the obligations of finding jobs for released workers, with this function being assigned to specialized regional organizations. The general principle should also be manifested here of delineation of the sphere of social guarantees (in the given case guarantees of job placement) and economic rationing (rationing extended that is, consideration of the objective needs of releasing excess or surplus workers). The prospect of an obligatory transfer to a less attractive workplace should be more potent than the factor is now of increasing economic accountability on the individual level.

Developed economic responsibility constitutes a necessary condition of bolstering the effectiveness of the whole system of material stimuli for work in the socialist economy. The question of differentiation of pay on the basis of labor is central in this connection. In the solution of this question we proceed from the fact that the socially necessary level is achieved through strengthening of economic responsibility, the dominant mass norm of intensive, conscientious work.

On the part of material motivation should be primarily aimed at increasing the degree of work and inventive initiative, standing out from the general mass of employees of labor. In our opinion, attempts are ineffective to solve with one and the same means. For example, grouping according to wage rates, various modifications of the piece-rate wage plus bonus (these two different economic systems).

What has been said does not mean getting from the agenda problems of differentiating the remuneration for the basic mass of workers. But it follows from what has been described above that we are against abstract and unending disputes. First, nothing, even the most ideal scale of remuneration, solves the system of contractual obligations and sanctions as a means of correcting the attitude of an owner toward labor and public property. Second, the supposition of a stimulating effect of higher differentiation in regard to remuneration is far from clear and, at least, quite limited.

Those economists who see the center of problems of wage improvement in attaining a most precise correspondence between individual contribution and remuneration to a certain degree lose sight of another, possibly more important, problem. The system of pay according to labor should not passively note the existing differences in the level of intensiveness of labor, conscientiousness and ability of individual workers. Under present conditions, it should primarily promote leveling of labor activity at a higher level than today. The brigade experience convincingly shows that the joint interest of workers lies not so much in scrupulous differentiation of individual remuneration as in a rise of the general, more or less equally distributed earnings through collective control of the work of each person at an adequately high level of intensiveness. But this means that the success of one or another collective in boosting the labor activity of its members should be palpably expressed in higher income. In other words, the subject of differentiation in remuneration of labor should be not only and possibly not so much the individual as the collective labor approach.

The requirements of the present type of social-economic development makes it possible to make the conclusion of a still another important direction of complex improvement of distribution relationships which encompasses in addition to wages and public consumption funds distribution of capital investment (production and nonproduction), commodities and the like among regions, sectors and social groups. These processes acquire a special significance in connection with transformation of the social infrastructure into a kind of base for all spheres of consumption and life, determining the comparative effectiveness of the various concrete directions and measures in the field of wages and public consumption funds.

This is due to the special role of the sectors of the social infrastructure as the material-technical base of regional systems of reproduction of the population and labor resources.

Encompassing a wide range of demographic, social-cultural and economic-everyday processes, such systems provide for the needs of the national economy for manpower of a certain quantity and quality and at the same time for the realization of a wide range of aims and values of socialist society connected with the all-round development of the personality and improvement of the well-being of the Soviet people. This brings about the need for significant activation in the future of processes of generalization in the nonproduction sphere and its transformation into a single complex of a regionally organized social infrastructure.

The solution of these questions does not require individual solution in the distribution of monetary income but rather the comprehensive management of the whole aggregate of outlays for social purposes. A concrete form of such management based on the analysis of present-day tendencies of settlement (as a comprehensive formation of the social-spatial environment) is the development of group systems of populated places in our country. The realization of social criteria of distribution is in this case the entire system of social guarantees of spatial-temporal availability of benefits and services (a comprehensive standard of living

conditions) forming together with scientifically based consumption norms and ecological and town-planning parameters of building quality and the normative basis of regional and urban development. But such a standard can be provided by a more perfect mechanism than today's of distribution of outlays for social development in which the leading role would be played by regional organs.

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INVESTMENT, PRICES, BUDGET AND FINANCE

EXPERIMENT INSTRUCTIONS FOR PROFIT PAID TO STATE BUDGET

Moscow EKONOMICHESKAYA GAZETA in Russian No 14, Apr 84 pp 17-18

[Article under rubric "Methodologies for the Economic Experiment": "Settlements Between Enterprises and the Budget: Instructions Concerning the Procedure for Making Settlements With the Budget for Payments from the Profits Derived by Production Associations (Enterprises) of the Ministry of Heavy and Transportation Machine-Building and the Ministry of the Electrical-Engineering Industry Which Are Participating in the Conducting of the Economic Experiment. Approved by USSR Minfin, 19 October 1983, With Changes and Corrections as of 23 March 1984."

[Text] In conformity with decree No. 659 of the CPSU Central Committee and the USSR Council of Ministers, entitled "Additional Measures for Expanding the Rights of Production Associations (Enterprises) of Industry in Planning and Economic Activities and for Intensifying Their Responsibility for the Results of the Work," and the appropriate decrees of the USSR Council of Ministers, the production associations (enterprises) of the Ministry of Heavy and Transportation Machine-Building and the Ministry of the Electrical-Engineering Industry are changing over to conditions of an economic experiment as of 01.01.84.

This experiment provides for the intensification of the self-interestedness of the production associations (enterprises)* in increasing the effectiveness of production, the prompt and complete fulfillment of the pledges to the budget, and also their responsibility in this matter.

It has been established by this decree that the enterprises make payments from profits to the state budget independently (in a decentralized manner).

USSR Ministry of Finance establishes the following procedure for settlements with the budget for the payments from the profits derived by enterprises and organizations that are subordinate to Mintyazhmash and Minelektroprom.

1. Settlements with the budget for payments from profit are to be made directly by the enterprises.

* Hereinunder production associations (enterprises) are called "enterprises."

2. The payments to the budget from profit consist of:

-- payment for the fixed production assets and normed working capital (payment for assets), computed according to the procedure established by instructions issued by USSR Ministry of Finance and USSR Gosplan concerning the procedure for paying into the budget the payment for production assets;

-- deductions to be paid into the budget from the computed profit on the basis of the approved norm list.

3. The norm list for deductions to the state budget from the computed profit prior to the beginning of the year is developed and approved for the enterprise by the ministry or, on its instructions, by the industrial association simultaneously with the plan for economic and social development and the financial plan.

The established norm lists are not to be changed or reapproved.

4. When determining the planned balance-sheet profit of the enterprise (for all types of activity) that is subject to distribution, one deducts the profit derived by the subsidiary plots, as well as the profit which, in conformity with decisions of the USSR Council of Ministers, has a strictly earmarked nature and is used in a special procedure*, including:

-- profit from the sale of consumer goods and articles intended for production and technical purposes that are manufactured from production waste products, which profit is to be channeled into the consumer-goods fund in the established procedure;

-- the profit left at the disposal of the enterprise for other purposes in the amounts established by decisions of the USSR Council of Ministers.

5. The planned computed profit from which the payments according to the approved norm list are established is defined as the difference between the planned total of profit computed in conformity with paragraph 4 of these instructions and the total amounts of payment for production assets and of interest for bank credit, which amounts have been stipulated by the plan.

6. In the financial plan (income and expenses balance sheet) of the enterprise, the total amount of the balance-sheet profit and payments to the budget from profit (by types of payment) is established for the year, with numerical breakdown by quarters of the year.

7. The ministries inform the all-union industrial associations** and enterprises that are directly subordinate to them of the total amount of the

* Hereinunder in the text of these instructions, the profit derived by subsidiary plots, as well as the profit which, in conformity with decisions of the USSR Council of Ministry, has a strictly earmarked nature, is called "profit that is to be used in a special procedure."

** Hereinunder all-union industrial associations are called "VPO."

planned balance-sheet and computed profit, the approved norm list for deductions to be paid into the budget from the computed profit, as well as the payments into the budget for production assets and the deductions from profit for the year, in the numerical breakdown of the quarters of the year. The VPO inform their subordinate enterprises of these indicators. Simultaneously, the ministries, for the enterprises that are directly subordinate to them, and also for the VPO, send to the financial agencies at the places where the enterprises are located the statements concerning the interrelations with the budget for payments from profit on a form in accordance with Appendix 1 to these instructions.

8. The ministries also communicate the planned totals of profit and payments to the budget to the administration of state income, USSR Ministry of Finance, for the VPO and the enterprises that are directly subordinate to the ministry. This information is submitted on a form as applicable to Appendix 2 of these instructions.

9. The VPO submit to the administration of state income, USSR Ministry of Finance, composite registers of statements concerning interrelations with the budget for payments from profit for the enterprises that are subordinate to them in accordance with Appendix 2 of these instructions.

10. In the statements concerning interrelations with the budget for payments from profit which are to be sent to the financial agencies at the places where the enterprises are located, using the form in accordance with Appendix 1 to these instructions, the profit is indicated after deducting the profit derived by the subsidiary plots, which are carried on the balance sheet of the enterprise, as well as the profit that has earmarked purpose and is used in a special procedure.

The submittal to the financial agencies of statements concerning interrelations with the budget for payments from profit for the individual enterprises is to be carried out in the scheme in accordance with Appendix 3 of these instructions.

11. Enterprises for which payments of deductions from profit have been established by the plan are to make these payments to the budget by the 10th, 20th, and 28th of each month in the amount of one-ninth of the total amount of payments that has been established for the quarter.

The financial agencies, upon coordination with enterprises having large payments for deductions from profit, can establish six payment deadlines: the 5th, 10th, 15th, 20th, 25th, and 28th of each month, in the amount of one-eighteenth of the total amount of the quarterly payment total, and for payers who have small amounts of payments, one payment deadline -- the 20th of each month in the amount of one-third of the quarterly total.

12. In the event that the ministries and VPO change, in the established procedure, the plan for profit and the payment into the budget of deductions from profit for their subordinate enterprises, the refined totals in the plans are reported to the financial agencies in the same procedure that was used for reporting the payments for the initial plan, that is, the

appropriate financial agencies are sent statements concerning the interrelations with the budget for payments from profit and composite registers are submitted in the procedure that has been established by paragraphs 7-9 of these instructions.

13. A change in the plans for payments to the budget from profit is to be reported within the following deadlines:

-- by ministries to VPO and to enterprises that are directly subordinate to them, and the appropriate financial agencies, within seven days after the date of receipt of the statement concerning the change in the income and expenses balance sheet for the ministry;

-- the VPO to the enterprises subordinate to them and the financial agencies at their place of location, within seven days after the date of receipt from the ministry of the statement concerning the change in the income and expenses balance sheet.

In the event of an increase in the plan for payments to the budget of deductions from profit, the additional amount of payments that is due for the expired periods of time is to be paid to the budget by the enterprises within five days from the receipt by the payer of the changed plan for payments or by the financial agency of the refined statements concerning the interrelations with the budget for payments from profit, in accordance with Appendix 1 to these instructions.

In the event of a reduction in the plan for payments, after the expiration of the individual deadlines for payment, the total amount of the decrease that is owed for the elapsed periods of time is included in the next payment or, in the event of the existence of a written statement, is returned to the payer.

14. The total amount of deductions to be paid to the budget from profit are computed for the appropriate chapters of Section 2 of the classification of income for the union budget and the republic budgets.

The responsibility for the correct computation and prompt payment of the amounts payable to the budget and for the submittal to the financial agencies of the established reports is borne directly by the enterprises.

16. In the event of tardiness in making payments from profit to the budget, a penalty is computed from the total amount of the arrears. The penalty is in the amount of 0.05 percent for every day of tardiness, beginning with the day following the payment deadline, through the day of actual payment.

17. Enterprises that operate in accordance with the Statute Governing the Socialist State Production Enterprise are required, within the established procedure and within the established deadlines, to submit to the rayon or city financial departments at their place of location quarterly and annual book-keeping reports and balance sheets, as well as settlements involving deductions to be paid into the budget, proceeding from the actual computed profit on the form in accordance with Appendix 4 to these instructions, on the

basis of which the quarterly and annual recomputations of payments to the budget are made. The computation of the payments to the budget on the basis of the actual computed profit is made in a cumulative total from the beginning of the year.

18. The profit based on the enterprise's report balance sheet for all types of activity is considered to be the actual profit.

When defining the actual profit to be distributed, one computes:

-- the profit to be used in a special procedure, which is indicated in paragraph 4 of these instructions;

-- the additional profit (total amount of markups to wholesale price), obtained from the sale of new, highly effective output and output intended for technical-production purposes, to which the state Quality Seal has been granted;

-- the total amount of additional proceeds obtained as a result of the overestimation of the established prices and the violation of the existing procedure of price determination, which amount is to be paid, in the established procedure, by the enterprise into the income of the budget and is not to be included in the report data concerning the fulfillment of the plan for sale of output;

-- the additional profit obtained in individual instances by the enterprise as a result of the production of output that deviates from the standards and specifications, which profit is to be paid to the income of the budget and is not to be included in the report data concerning the fulfillment of the plan for sale of output.

At such time the total amount of additional proceeds that is obtained as a result of the overestimation of the prices and tariff rates and that is to be paid into the income of the state budget is deducted from the actual profit for the report period in which the decision was received to pay that amount to the budget, irrespective of the period in which that occurred. The same procedure is to be used to adjust the actual profit by the amount of profit from the sale of output that has been manufactured with deviations from the standards and specifications;

-- the total amount of additional profit obtained from the carrying out of technical-organizational measures and that is channeled into the compensation of the shortage of the enterprise's own working capital or the paying off of credit received for that purpose, on assignments that have been given by the ministry or VPO.

At such time the excluded additional profit is defined as the difference between the actual (reduced by the profit to be used in a special procedure) and planned (without the additional assignment or the profit to be used in a special procedure) balance-sheet profit, but no more than the total of the additional assignment;

-- the profit to be used in a special procedure in conformity with individual decisions of the USSR Council of Ministers.

In the event of nonfulfillment by the enterprise of the conditions that grant the right to leave the profit at its disposal (in conformity with paragraph 4 of these instructions), that profit is to be distributed in the generally established procedure.

For enterprises that have as part of their makeup subsidiary plots that operate at a planned loss, the balance-sheet profit must not be increased by the amounts of the planned or actual losses of those plots within the plan limits. In these instances the balance-sheet profit is to be increased only by the amount of losses in excess of plan.

19. When determining the actual computed profit from which payments are to be deducted for payment into the budget on the basis of the approved norm list, one deducts from the actual balance-sheet profit (paragraph 18 of these instructions) the actual total amounts of payment for production assets and of interest for bank credit.

The computation of the actual total amount of payment for production assets is made every quarter on the basis of the computations of the payment into the budget for fixed production assets and and normed working capital, which computations are prepared by the enterprises on the form in accordance with Appendix 1 to the instructions of USSR Ministry of Finance and USSR Gosplan, No. 195, dated 30.11.79.

However, a saving on payment for production assets that results from non-fulfillment of the approved plan for activation of fixed assets, production capacities, and projects, is not taken into consideration when determining the actual computed profit and is subject to payment to the budget.

One also deducts from the actual computed profit:

- a) the total amounts of bonuses to be paid on the basis of the results of the All-Union Socialist Competition;
- b) additional deductions to be paid into the material incentives fund for increasing the production of consumer goods per ruble of wage fund.

20. In the event of fulfillment and overfulfillment of the profit plan (except for the profit to be used in a special procedure), the actual computed profit of the enterprise is channeled into:

- deductions to be paid to the state budget according to the approved norm list (no less than the total amount of payments that has been stipulated in the income and expenses balance sheet);
- the actual deductions and expenditures for the enterprise's own needs, which have been stipulated by the existing statutes governing the distribution of profit for enterprises of Mintyazhmash and Minelektrotekhprom.

In the event of insufficiency of the sources that have been defined by the existing statutes for making deductions to be paid into the material incentives

for fulfillment of the assignments and pledges for shipments of output according to the products list (variety) and within the deadlines in conformity with the concluded contracts (production orders), those deductions are made at the expense of the reduction of the deductions to be paid into the budget from profit (in necessary instances, the payment for production assets).

21. For enterprises for which the plan has not stipulated any norms for payment to the budget from the computed profit, the actual compute profit remaining after it has been channeled into the expenditures that were stipulated by the financial plan and the additional deductions to be paid into the economic incentive funds is distributed equally between the budget and the enterprises.

The saving from the reduction of the losses for enterprises operating at a planned loss which have incurred losses below the plan is distributed in the same procedure.

22. In the event of underfulfillment of the plan for balance-sheet profit (with the exception of the profit to be used in a special procedure) up to 2 percent, the deductions from profit for payment into the budget are made within the established planned amounts at the expense of the corresponding reduction in the profit remaining at the disposal of the enterprise. In the event of nonfulfillment of the profit plan in large amounts, the deductions to be paid into the budget are computed according to the established norm list and are increased by payments according to the norm list within the limits of the 2-percent nonfulfillment of the plan for balance-sheet profit.

23. In addition to the payments from profit, the following is channeled into the budget:

-- part of the additional profit obtained by the enterprise from the sale of new, highly effective output intended for technical-production purposes and output with the state Seal of Quality.

These payments are determined in the amount of 50 percent of the additional profit from the sale of that output that remains after it is channeled in the amount of up to 70 percent to the economic incentive funds.

At such time, from the total amount of additional profit to be paid to the budget the enterprises contribute:

-- 10 percent to the city or rayon budget at the enterprise's place of location or, on the decision of the ASSR Council of Ministers, or executive committee of the kray or oblast Council of People's Deputies, to the republic budget of the ASSR, or the kray, oblast, or okrug budget*;

* The procedure for paying into the income of the local budgets part of the additional profit from the sale of new, highly effective output and output with the state Seal of Quality has been made known to the ministries and departments of the USSR and union republics, as well as the financial agencies in USSR Ministry of Finance letter No. 113, dated 08.06.81.

-- 90 percent of that amount, to the union budget;

-- 75 percent of the actual profit obtained by subsidiary plots that are carried on the balance sheet of the enterprise, based on the results for the year.

Examples of the computations of deductions to be paid into the budget from the computed profit according to the established norm list are given in Appendix 5 to these instructions.

24. The total amounts of deductions from profit, which were additionally computed by the enterprises themselves, proceeding from the actually obtained profit, are deposited by the payers to the income of the budget, without waiting for any information provided to the financial agency, within the following deadlines:

-- for quarterly settlements, within a five-day period after the day established for submitting the bookkeeping reports and balance sheets;

-- for annual settlements, within the deadlines established by the financial agencies with the coordination of the appropriate enterprises, but no later than 1 April of the year following the report year.

If it is established by the financial agency, as a result of checking the settlements based on payments from profit, that the payments of deductions from the profit are to be paid into the budget in a larger sum than was indicated in the payer's settlement, the payment into the budget of the additionally due payments based on the quarterly recomputations are made within a five-day period from the day on which the financial agency sent out the announcement concerning the additional payment, and the penalties are computed after the expiration of a five-day period from the day established for the submittal of the balance sheet and report.

25. When making settlements with the budget on the basis of the profit obtained by scientific-research, designing, construction planning-and-designing, and technological organizations of Mintyazhmash and Minelektrotekhprom, one must be guided by USSR Ministry of Finance letter No. 38, dated 25.02.81.

26. The rayon and city finance departments at the place of location of the enterprises are required:

-- to carry out supervision of the prompt and complete payment by the enterprises of payments to the budget from the profit which are due in accordance with the plan or with the computations, proceeding from the actual profit, and also in accordance with the results of audits of the bookkeeping reports and balance sheets. In the event of nonpayment of the proper amounts to the budget within the established deadline, the amounts due are to be exacted in an undisputed procedure;

-- to check the computations submitted by the enterprises for payments for profit within the following deadlines:

-- quarterly, within a five-day period;

-- annual, within a 15-day period from the date of receipt of the bookkeeping reports and balance sheets.

If there is a need to require the enterprise to submit additional materials for the purpose of checking the correctness of the computation of the payments to the budget from profit;

-- for purposes of checking the correctness of the determination of the profit indicated in the bookkeeping reports and balance sheets of the enterprises, as well as the total amounts of payments from profit, [the enterprises are required] to carry out an audit of the annual bookkeeping reports and balance sheets of all enterprises and organizations.

This check is carried out in conformity with the instructions of the USSR Ministry of Finance, entitled "Procedure for Conducting an Audit of the Bookkeeping Reports and Balance Sheets of Production Associations, Enterprises, and Organizations," No. 112, dated 19.08.83, apart from Section XIV, "Formalization of the Results of the Audit," with the mandatory checking of the correctness of the deductions from profit to be paid into economic incentive funds.

For enterprises whose profit according to the plan for the year comes to as much as 30,000 rubles, the audit of the bookkeeping reports and balance sheets is done at least once every two years.

If, as a result of the audit, the profit of the enterprise or organization is increased or it is revealed that there has been an overestimation of the total amounts of the profit to be deducted for payment to the economic incentive funds and to other special funds that are formed at the expense of profit, all the amount of increase in profit and the overestimation of the deductions to the funds must be paid to the budget within a five-day period from the day of preparation of the audit document, with a reflection in the accounting for credit on account 73. "Settlements With the Budget" in the correspondence with accounts, respectively, 80, "Withdrawn Funds At the Expense of Profit," and 87, "Economic Incentive Funds."

In the computation of the deductions to be paid to the budget from the actual computed profit, this increase in profit is not taken into consideration.

In conformity with the Statute Governing Bookkeeping Reports and Balance Sheets, the financial agencies are required to communicate to the enterprises their comments concerning the bookkeeping reports and balance sheets no later than 15 days after their receipt at the financial agencies.

In the event of differences of opinion with the enterprises with regard to the results of the audit of the annual bookkeeping reports and balance sheets that has been carried out by the financial agencies, those differences of opinion, after their careful consideration by the managers of the rayon and city financial departments within a 15-day period after the date of receipt of the reports at the financial agency, must be sent to the superior organization that approves those reports.

If the agencies that approve the bookkeeping reports and balance sheets fail to report to the appropriate financial agencies within ten days after the receipt of their recommendations concerning their failure to agree with them, the recommendations are deemed to be accepted.

In the event of nonacceptance by the superior organization of the recommendations made by the financial agencies, and those recommendations are substantiated by the existing statutes and directive instructions, the rayon and city financial departments, within three days after the receipt of the objections from the superior organizations, send the materials concerning the differences of opinion to the appropriate kray or oblast financial administrations (departments) or to the ministries of finance of the union republics (which are not subdivided into oblasts) or autonomous republics, and the latter, after carefully verifying the substantiation of the requirements from the rayon and city finance departments, within a three-day period send those materials with their findings to the administration for the financing of machine-building, of the USSR Ministry of Finance.

The same procedure is used for sending the materials pertaining to differences of opinion concerning the audits that have been carried out by the financial agencies after the expiration of a 15-day period following the date of receipt of the reports at the financial agency.

Changes to the reports are made:

-- if there are no differences of opinion, in the same month in which the audit was carried out;

-- if differences of opinion exist, in the month in which the decision was made concerning the correct;

-- within a 40-day period after the date of receipt of the bookkeeping reports and balance sheets, [the enterprises are required] to carry out an analysis of the economic-financial activity of the enterprises that failed to guarantee the fulfillment of the plan for the basic production and financial indicators.

The list of enterprises for which an analysis of the balance sheet must be carried out, and the questions that are to be analyzed, as well as the report period for which the audit is to be conducted, are established by the administrators of the financial agencies.

When carrying out the analysis of the economic-financial activity, it is necessary to be guided by the Methodological Instructions for Analyzing the Economic-Financial Activity of Production Associations and Enterprises of Industry, which were made known by USSR Ministry of Finance letter No. 66, dated 02.06.82.

When analyzing the economic-financial activity of the enterprises, it is necessary to devote special attention to the reliability of the planning and reporting data;

1. The USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration have decided to improve the system of settlement of enterprises with the budget for payments from profit for 1983. The system of settlement of enterprises with the budget for payments from profit for 1983 should be improved in accordance with the requirements of the USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration. The system of settlement of enterprises with the budget for payments from profit for 1983 should be improved in accordance with the requirements of the USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration.

2. The USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration have decided to improve the system of settlement of enterprises with the budget for payments from profit for 1983. The system of settlement of enterprises with the budget for payments from profit for 1983 should be improved in accordance with the requirements of the USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration.

3. The USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration have decided to improve the system of settlement of enterprises with the budget for payments from profit for 1983. The system of settlement of enterprises with the budget for payments from profit for 1983 should be improved in accordance with the requirements of the USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration.

4. The USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration have decided to improve the system of settlement of enterprises with the budget for payments from profit for 1983. The system of settlement of enterprises with the budget for payments from profit for 1983 should be improved in accordance with the requirements of the USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration.

5. The USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration have decided to improve the system of settlement of enterprises with the budget for payments from profit for 1983. The system of settlement of enterprises with the budget for payments from profit for 1983 should be improved in accordance with the requirements of the USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration.

6. The USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration have decided to improve the system of settlement of enterprises with the budget for payments from profit for 1983. The system of settlement of enterprises with the budget for payments from profit for 1983 should be improved in accordance with the requirements of the USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration.

7. The USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration have decided to improve the system of settlement of enterprises with the budget for payments from profit for 1983. The system of settlement of enterprises with the budget for payments from profit for 1983 should be improved in accordance with the requirements of the USSR Ministry of Finance and the USSR Ministry of Enterprise Management and Administration.

8. These instructions go into effect on 01.01.84.

9. Settlements with the budget for payments from profit for 1983 should be made in conformity with the procedure that was previously in effect.

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...the most productive method of producing cast iron parts. As is known, the making of the sand mold in the lost wax method is one of the most productive methods of producing cast iron parts. In casting parts made of cast iron, the use of the lost wax method is more than twice as productive as the use of the sand mold method. The use of the lost wax method, with the use of special templates, under pressure, does not require the formation of wastes. More than 30 percent of the total volume of cast iron parts is produced without mechanical treatment.

It should also be noted that the coefficient of cooperation in the deliveries of cast iron parts in this republic is steadily decreasing. It in 1970 amounted to 0.02 in the production and deliveries of cast iron, by last year it had decreased to 0.01; there has also been a corresponding reduction in the production of steel castings.

One of the reasons for this? In 1970 cast iron was being produced in this republic in 11 enterprises, while last year it was produced at 29. The situation with respect to steel castings is analogous. The machine-building enterprises are striving to provide their own needs by means of their own efforts. Another reason for the decrease in the concentration of casting production.

But, of course, such trends in the development of cooperation do not correspond to the present-day level of the development of machine building. Therefore, the following question suggests itself: what obliges the managers of enterprises to turn aside from production cooperation, to create and develop manufacturing capacities which are inappropriate and quite unprofitable for them?

Cooperating enterprises must work in constant contact with each other and effectively coordinate their engineering specifications; they should also conduct tests and transmit fittings, blueprints, and materials to each other. These problems can be effectively solved only when there are good contacts with workers in closely allied fields located in direct proximity, whereas having suppliers located at a considerable distance cancels out the very idea of cooperation. The development of intra-sectorial ties has been brought about by the requirements for a specific product the production of which in other sectors has been complicated by various types of reasons. Inter-sectorial cooperation encompasses items with a broader field of application and usually involves the interests of enterprises under the jurisdiction of many ministries and departments situated within a single economic region.

Comparative analysis of the developmental trends of these two types of cooperation shows a clear predominance of the intra-sectorial. Moreover, its specific proportion is steadily increasing. In 1975 the proportion of cast iron within the total volume of cooperative deliveries amounted to 83 percent, while during the past year this figure had already reached 85 percent.

if the inter-sectorial ties are marked by a large degree of stability, both with regard to volumes as well as to the number of consumers, and are carried out basically within the republic, the intra-sectorial ties are carried out by means of inter-republic, mainly long-distance, deliveries. Seventeen years ago less than 29 percent of the cast iron was delivered beyond the borders of the republic in accordance with intra-sectorial ties. But today this figure has already reached 40 percent.

The general trends of the development of the territorial-sectorial structure of cooperation within the republic are clearly seen in the example of the largest supplier of cast iron--the Kaunas Tsentrolit Foundry. During the mid-1970's it was shipping out 27 percent of its products to its customers in accordance with the plan for inter-sectorial cooperative deliveries, as approved by USSR Gosplan. The remaining volume of production output was accounted for by intra-sectorial ties, as approved by the Ministry of the Machine Tool and Tool Building Industry. Now these indicators have abruptly changed in favor of the latter: within the over-all growth in the volume of cooperative deliveries--amounting to 75 percent--intra-sectorial deliveries have doubled, while inter-sectorial ones have increased by only 11 percent. The specific proportion of intra-sectorial deliveries, which was predominant even earlier, has increased up to 83 percent, whereas the inter-sectorial ones have declined accordingly.

The steady increase in the production output of machine building has led to increased demands for all types of castings. And, since the volumes of intra-republic are declining due to the ever-increasing scale of shipping items beyond its borders, the enterprises are compelled either to step up their own production or attempt to obtain castings through cooperative ties from other economic regions. As a result, the volume of cast iron shipped into the republic from 1975 through 1982 almost doubled, primarily by means of intra-sectorial deliveries.

The balance-sheet indicates that the production of cast iron in Lithuania considerably exceeds its consumption. Along with this, there has been a steady increase in its import from beyond the republic's borders. At the same time there has been an increase in the specific proportion of deliveries to other regions in the country. The principal reason for this situation, so difficult to explain from the viewpoint of common sense, lies in the fact that intra-sectorial deliveries have developed by proceeding not from integrated national-economic interests but rather from the numerous machine-building ministries, which do not coordinate their own actions.

Thus, last year those enterprises of the Ministry of the Machine Tool and Tool Building Industry, the Ministry of the Automotive Industry, and the Ministry of Chemical and Petroleum Machine Building which are located on the territory of the republic delivered almost 40,000 tons of cast iron to other economic regions. At the very same time plants of the Ministry of the Electrical Equipment Industry, the Ministry of Machine Building for Light and Food Industry and Household Appliances, the Ministry of Tractor and Agricultural Machine Building, and the Ministry of Machine Building for Animal Husbandry and Fodder Production shipped in more than 8,000 tons of analogous products.

It should be noted that the deliveries are basically carried out over great distances: two-thirds of the cast iron being shipped beyond the borders of the republic passes over a distance of more than a thousand kilometers. A similar large distance is traversed by cast iron being delivered from other regions.

From what has been said one could draw the conclusion that cooperation in machine building is developing predominantly in the direction of two-way, inter-republic deliveries, an increase which is unjustifiable from an economic and technical point of view. For the most part, these are intra-sectorial deliveries with a simultaneous decrease of the intra-republic, inter-sectorial ones. Such trends are especially undesirable for economic regions which do not have their own metallurgical bases.

For example, from Tula Oblast to Lithuania, which are more than 1,000 kilometers distant from each other, over 100,000 tons of cast iron are shipped every year. Thus, there are beginning to appear double, two-way deliveries, whereby raw material is shipped into the republic, and cast iron is made from it, which is then shipped out to other regions at considerable distances.

The comprehensive program of scientific and technical progress provides that in the very near future the volume of machine-building production output in this republic will increase by a factor of 2.2. One of the principal trends for increasing the effectiveness of machine-building production is becoming the further deepening of specialization. This will invariably entail a corresponding increase in the consumption of products being supplied in accordance with cooperative ties.

Forecasts indicate that the consumption of cast iron will increase by a factor of almost 1.7 by the beginning of the next millenium. If the existing procedure for forming cooperative ties remains unchanged, the volume of two-way deliveries will increase at a rapid pace. Therefore, in order to guarantee deliveries beyond the borders of the LiSSR, cast iron capacities in the republic will have to be doubled with a corresponding increase of shipping metallurgical materials in from other economic regions. But the specific proportion of intra-republic deliveries of cast iron will decrease by almost one-third.

Inasmuch as the retention in its present form of the existing procedure for planning and organizing cooperative deliveries will lead to a significant decrease in their effectiveness and an increase in unjustified expenditures, the necessity arises of searching out new ways to form the entire complex of cooperative ties. In order to do this, it is necessary to eliminate the contradiction which has taken shape between the developmental trends of production cooperation and the system of planning-and-organizational methods which ensure its improvement. The steady increase in the specific proportion of items obtained through cooperation and the relative decrease in the specific proportion of raw materials and other materials within the over-all structure of expenditures must be accompanied by appropriate change in the methods of providing the resources necessary to industry.

If the supply-and-sales organizations, in order to obtain raw materials and other materials, attach enterprises to suppliers in a centralized procedure

regardless of their sectorial jurisdiction, cooperative ties in an economic region are formed in a spontaneous, unplanned manner. The territorial organs of USSR Gosstnab carry out only accounting and monitoring controls on the deliveries in accordance with the plans of inter-sectorial cooperation, which within the over-all volume comprise an insignificant and steadily declining portion.

In general, the intra-sectorial deliveries in economic regions are not coordinated by anyone and are not even accounted for statistically. In our opinion, an increase in their effectiveness can be attained by a complex of measures promulgated in two sequential stages. First, we must improve the existing system of accounting, planning, and organizing cooperative deliveries. Above all, it is necessary to put the accounting of these deliveries into order, and this will provide a good possibility for working out top-notch balances between production and guaranteeing consumers the appropriate types of products.

In order to reduce the distances over which deliveries are carried out, the Gosstnabs of the Union republics and the territorial main administrations, by means of comparing the production costs at the region's enterprises with the outlays for obtaining products from other regions, ought to determine the maximum allowable radii for cooperation and communicate these data to the appropriate planning organs. This will allow us to substantially reduce inefficient hauls.

We cannot recognize as normal the fact that our system does not have everywhere independent sub-divisions, concerned with the problems of production cooperation in a region. And where they do exist they perform only accounting and monitoring control functions rather than exerting any kind of influence on the structure of cooperative ties.

The work which we are carrying out allows us, by relying on commonly accepted methods, to improve in a limited degree the system of accounting, planning, and organizing cooperative deliveries within an economic region. However, this is not enough to fully overcome the objectively existing contradiction between the developmental tendencies of the cooperation process and the system of planning- and organization measures ensuring it.

The main thing is that at the present time there are no links between the production-and-technical interests of the enterprises of various sectors located within the borders of a single economic region. Thus, the contradiction between the sectorial and territorial approaches to the solution of this problem have not been completely overcome.

In our opinion, further improvement of cooperative ties in machine building requires that their formation be the concern of our system's territorial organs regardless of the sectorial jurisdiction of the suppliers and consumers. Moreover, the determination of the production volumes and the over-all volumes of inter-republic deliveries should be carried out by the planning organs, while the establishment of direct, cooperative ties between the suppliers and the customers, as well as the implementation of the delivery process should be done by the territorial organs of USSR Gosstnab.

An important condition for the efficient performance of these functions is the availability of complete information about the actual course of cooperative deliveries as well as the possession of the rights to effectively regulate deliveries and impose fines on suppliers in case they violate their obligations. This is possible only if we have contractual relations with customers and suppliers. In our opinion, therefore, it would be expedient to set up cost-accounting administrations for cooperative deliveries within the territorial organs of material-technical supply. They should discover the assortment needs of the enterprises for products in accordance with the plans for cooperative deliveries, allocate the orders in a centralized manner and attach suppliers to customers, as well as working out efficient schemata of cooperative ties.

As a result of the organizational re-structuring which is being proposed, the scheme for forming cooperative ties will be simplified considerably, since these functions will be concentrated in a single cost-accounting organ. The pathway through the requisition documentation will become considerably simpler, the number of levels for working out the plan will be reduced, and--most importantly--instead of a series of independently compiled and approved plans for cooperative deliveries, a unified plan will be put into operation; it will link up the sectorial and territorial interests of various enterprises, allowing us to ensure the efficient loading of capacities within an economic region.

Setting up such an organ does not require any additional increase in the number of persons employed in the administrative machinery. It will be formed by means of the workers of the cost-accounting, specialized, supply-and-sales subdivisions; at the present time they are responsible for ensuring the production of items for general machine-building use. Also to be included are workers from the departments of cooperative deliveries of industrial enterprises who have been freed up in connection with the transfer of part of the duties of these departments to the new, cost-accounting administration.

The proposed organizational re-structuring should not be thought of as a routine change in the structure of the USSR Gosnab organs. This is a qualitatively new link in the general state system of material-technical supply, capable of ensuring a closer production-technical cooperation among the machine-building enterprises of an economic region, of hampering the intensification of narrowly departmental trends in the development of cooperation and performing a role of an economic mechanism, new in principle, for forming cooperative ties. The given measure would allow us, by means of organizational factors alone, to raise the level and enhance the importance of cooperation in the economic region.

Of course, this does not exclude other organizational forms of solving this serious, All-Union problem, which requires more persistent attention by specialists and scholars.

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ECONOMIC MODELING AND COMPUTER TECHNOLOGY APPLICATION

FEDORENKO REVIEWS ECONOMIC MODELING DEVELOPMENT

Moscow EKONOMIKA I MATEMATICHESKIYE METODY in Russian No 1, Jan-Feb 84 pp 18-27

/Article by N. P. Fedorenko, Moscow: "Ways of Development of the Economic-Mathematical Direction of Soviet Economic Science"/

/Text/ The June (1983) Plenum of the CPSU Central Committee set the task of attaining a much higher level of ideological-theoretical work in the field of social and, primarily, economic sciences and of the work of scientific institutions and of every scientist separately. "There is a need for a decisive turn to the realistic and practical tasks that life sets for our society. Social sciences should become efficient helpers of the party and the entire nation in the accomplishment of these tasks to the same extent as natural sciences" /Yu. V. Andropov, "Izbrannyye rechi i stat'i" (Selected Speeches and Articles), Moscow, Politizdat, 1983, p 285/.

The high requirements that the party places upon economic science are generated by the need for a planned and all-around improvement in developed socialism and the organization of public production management.

According to Marxist methodology, a higher level of development of productive relations of socialist society, which also involves changes in the management system, should correspond to the new stage in the development of productive forces. What are the new factors inherent in the productive forces of our society at the present stage?

First, the extremely high mobility of the production process expressed in its rapid reorganization under the effect of the achievements of scientific and technical progress in the area of development of new technologies and products. The dynamic nature of production requires a more flexible planning and management, an efficient maneuvering of resources and finer tools for the study of needs.

Second, in connection with the increase in the scale and complexity of production the role of strategic decisions in the totality of economic tasks rises. Large investments in different spheres of the national economy and in the development of the infrastructure not only increase the time lags between the moments of adoption of economic decisions and the derivation of economic

results, but also determine the country's general production and economic appearance for a long period. This circumstance intensifies the importance of scientifically substantiated long-term planning for 10 to 15 years. The preparation of the Food and Energy programs has been a major contribution to the accomplishment of this task. The methods of development of an overall program for scientific and technical progress for a 12-year period require a further improvement. It is necessary to increase the role of this document in preplan substantiations of long-term decisions on the productive forces of developed socialist society.

Third, the significant rise in the cost of a number of key types of primary resources and the aggravation of the problem of environmental protection have changed the ideas on the efficiency of the production apparatus. The very content of scientific and technical progress has become different. Instead of the previously predominant type of development aimed mainly at the replacement of live labor with productive capital and at the rise of the capital-labor and power-worker ratio, the innovations that, along with this, ensure the saving of power and natural resources, overall processing of raw materials and development of low-waste technologies minimizing environmental pollution acquire fundamental importance. For the realization of the modern type of scientific and technical progress it is necessary to construct criteria of selection of variants of economic decisions, which include not only an overall economic evaluation of the entire combination of utilized production resources, but also social priorities.

Fourth, the present level of development of productive forces places special demands upon the "human factor." Complex equipment calls for high skills on the part of the worker and the constant changes in production brought about by scientific and technical progress generate the need for mastering new know-how and methods of work. The realization of these tasks is possible only if workers have a high level of education. Under the conditions of socialism the content of labor, its creative nature and creation of conditions for an extensive manifestation of man's abilities occupy the first place among the motives of effective labor activity. Production automation, where it is developed, undertakes, as a rule, the performance of monotonous, routine operations, freeing man for creative work. The problem of mechanization and automation of production processes has now been raised to a general state level. In its nature it is a multiaspect problem. Both problems of economic efficiency and social problems are closely interwoven in it, that is, satisfaction with labor, establishment of an efficient connection between the quantity and quality of labor and its remuneration, steady implementation of the policy of full employment and strengthening in workers of socialist enterprises the sense of being "coowners" of public property.

The speech by Comrade Yu. V. Andropov, general secretary of the CPSU Central Committee, at the June (1983) Plenum of the CPSU Central Committee formulated the basic problem points in the development of economic science at the present stage: establishment of an efficient mechanism of management of scientific and technical progress; selection of the most reliable ways of increasing production efficiency and the quality of output; development of principles of a scientifically substantiated price formation; improvement in distribution

relations. The efforts of economic scientists must be directed primarily toward the accomplishment of these tasks. Specialists engaged in economic-mathematical modeling and in the establishment of the system of optimum national economic management can and should have their say here.

The very idea of the possibility of utilization in the socialist national economy of methods of optimum planning and management based on modern means of economic-mathematical modeling and on an extensive utilization of computers is the direct result of the prolonged development of Soviet economic science. The advancement of such an idea has become possible as a result of the accumulation of the big theoretical "luggage," as well as the practical experience in the formulation and accomplishment of economic tasks of a varying degree of complexity, and the combination of economic science with mathematics and cybernetics.

Academician Vasiliy Sergeyevich Nemchinov, whose 90th birthday is on 15 January 1984, has an outstanding role in the formation and development of the economic-mathematical direction in Soviet economic science. Together with L. V. Kantorovich and V. V. Novozhilov he established the theoretical basis for the new scientific direction.

V. S. Nemchinov made a significant contribution to the development of the methodology of economic-mathematical modeling and actively applied model tools in the study of problems of socialist expanded reproduction. To this day his fundamental work "Obshchestvennaya стоимост' i planovaya tsena" [Public Value and Planned Price] remains a striking example of a successful combination of a profound political-economic analysis with the utilization of quantitative research methods. It must be admitted that by no means everything from his rich creative legacy [1] has been properly developed in the works of his students and followers.

The organic combination of theoretical developments with a spirited response to urgent problems of economic development raised by life is the inalienable trait of V. S. Nemchinov as a scientist and citizen. His work "Sovershenstvovaniye planirovaniya i upravleniya narodnym khozyaystvom" [Improvement in National Economic Planning and Management] [1, Vol 5], whose many principles were embodied in the course of preparation for and realization of the economic reform of 1965, evoked great interest at one time.

Vasiliy Sergeyevich invested a great deal of effort and energy in the organizational formulation of economic-mathematical research, on the basis of which a major direction within the framework of economic science has been formed in our country in the last two or three decades. A number of specialized scientific institutions have appeared. Faculties and departments of economic cybernetics have been established in the country's higher educational institutions. Apparently, there are grounds for reviewing some results of the development of theoretical and methodological problems in the optimum functioning of the socialist economy and modeling of the economic mechanism, methods and models of overall national economic planning and forecasting, methods of optimum planning and management in regions, sectors, associations and enterprises and software for the solution of corresponding problems. On the whole,

the economic-mathematical direction is firmly based on the Marxist-Leninist economic theory and is applied both in theoretical and applied research in accordance with the needs of public practice.

The nature of the tasks facing scientists, who develop the system of optimum national economic management and planning, and the complexity and novelty of many problems arising in connection with this require a search for the most efficient ways of accomplishing them and a corresponding concentration of the efforts of scientific workers. Often, however, a dissipation of forces among collectives of scientists, who investigate very close problems in an insufficiently linked manner, is observed. Sometimes principal attention is concentrated on relatively secondary matters, whereas certain urgent problems do not receive a prompt and proper response. In the light of the higher, new requirements placed by the party on economic science there is a need for a certain regrouping of the forces of scientific personnel and their concentration on the accomplishment of realistic, practical tasks.

The new direction has emerged at the interface of economics and mathematics, as well as cybernetics. At the same time, we do not have in mind a "transfer of the economy to a mathematical basis" in the simplified, vulgarized sense of this process as the "mathematical formalization" of science.* It is quite clear that society and economy are extremely complex objects of research. At any stage of their study formalization is not capable of encompassing the problems examined by science in an exhaustive manner. A constant organic combination of formal and informal methods will always be necessary.

Nor do we have in mind another thing, that is, that the combination of economics and mathematics has allegedly occurred as some one-time act, spontaneously. In fact, the application of mathematics in economics has long traditions going back, first, to Quesnay's models, which K. Marx called "brilliant," and to the works of K. Marx and F. Engels themselves.

The effect of objective economic laws of socialism receives full scope in our society, which is now developing on the basis of mature production relations. Thereby, socialism acquires the nature of an all-around developed and mature integral system.

It is not accidental that beginning in the 1960's, when our country entered the period of developed socialism, the elaboration of major planning-economic and organizational-economic measures, such as the measures for improvement in management, planning and economic incentives of 1965 and 1979, realization of national economic goal-oriented programs and so forth, has acquired ever greater importance.

The transformation of the Soviet economy into a single national economic complex and the further socialization of socialist production and improvement in production relations adequate to this process have set for economic science,

*Of course, the importance of formalization, without which "... an effective dialogue among experts in the humanities and natural sciences and mathematicians becomes simply impossible," must not be underestimated /2, p 1717.

among other theoretical and practical problems, the problem of raising the level of the system and overall nature of analysis and management of the economy of developed socialism.

The internal logic of development of economic science has given rise to a whole layer of overall research based on the political economy of socialism, on the one hand, and feeding specific economic disciplines with its results, on the other. However, this "intermediary layer" of research itself has required a system interpretation. That is why the elaboration of problems of optimum functioning of the socialist economy under the conditions of developed socialism, which, ultimately, must be examined and compared from the point of view of efficiency of all public production on the basis of the national economic criterion of optimality (with a precise consideration of the limited nature of material, labor and natural resources), is urgent. The requirement for the most efficient organization of production and management presupposes an orientation toward efficiency and intensification factors in national economic development. Essentially, such an orientation is inconceivable without the solution of one of the key problems of economic theory--a scientifically substantiated commensuration of expenditures and results.

F. Engels wrote in "Anti-Duhring" (with reference to "Das Kapital") that in the future society "ultimately, the plan will be determined by the weighing and comparison of the useful effects of various consumer goods with each other and with the quantities of labor necessary for their production" /K. Marx and F. Engels, "Soch." [Works], Vol 20, p 321/.

For a number of years some economists have raised objections to the idea of evaluation of public usefulness (use value), in fact, ignoring practice, which constantly should have determined where and in what ratio funds are to be allocated: for housing construction or the output of motor vehicles, for the construction of roads or airports, for the extraction of coal or petroleum and so forth. Of course, a correct solution of these problems is possible only from the point of view of the maximum satisfaction of public needs with the available resources. This is an evaluation of public usefulness (use value).*

The development of the system of optimum functioning of the socialist economy is based on the propositions of the political economy of socialism and, at the same time, requires their specification during the formulation of the system of national economic and local criteria of optimality and the principles of an efficient utilization of the production capabilities of society and determination of optimum proportions and rates of national economic development.

*V. A. Medvedev quite rightly singles out this aspect of the problem: "... In many interpretations of efficiency principal attention is paid to expenditures of public labor. However, expenditures should be compared with the result, which is manifested in a specific use value or their combination. Here political economy encounters serious prejudice and a kind of theoretical inertia, in accordance with which use value as pertaining to the material and physical aspect of production allegedly is not included in the subject of this science" /3, pp 9-10/.

The realization of the corresponding theoretical propositions is possible under modern conditions only on the basis of an extensive application of economic-mathematical methods and computers. At the same time, there is a specific point of view of the subject of investigation in the part concerning relations between goals and resources, which also gives rise to a specific method of scientific analysis. At the same time, it becomes ever clearer that the principles of the optimum system of socialist management should be developed with the utilization of the achievements of all economic, as well as many noneconomic, sciences.

The interpretation of the category of optimum functioning has expanded in the last few years. Along with an examination of its primarily technological and production aspects more and more attention is paid to the study of the interaction of economic and social aspects. The intensification of a social and economic direction is an important requirement of the present stage in the development of Soviet economic science and the economic-mathematical direction.

Political economic research on socialist public production is to ensure the study of the dynamics of the forms of socialist property, socialist organization of labor and distribution and interconnection of intersectorial and interregional processes. The development, along with the category of consumption, of the category of the socialist way of life is very urgent. Comrade Yu. V. Andropov paid special attention to this at the June (1983) Plenum of the CPSU Central Committee: "The formula 'rise in the standard of living' is often used in our country. At times, however, we interpret it in a simplified way, meaning only an increase in the population's income and the production of consumer goods. In reality the concept of the standard of living is much broader and richer. It means a constant rise in people's consciousness and culture, including culture of the way of life, of behavior and what I would call culture of intelligent consumption. It implies an exemplary social order, health, sound nutrition and a high quality of services for the public... It means a top-notch, from the moral and esthetic point of view, utilization of free time--in brief, everything that in combination is appropriately called socialist civilization" (Yu. V. Andropov, "Izbrannyye stat'i i rechi" [Selected Articles and Speeches], Moscow, Politizdat, 1983, p 290).

The elaboration of the set of problems of development and improvement in the socialist way of life in their entire diversity requires close attention on the part of social scientists. These problems must be thoroughly investigated in the process of preparation of the social and economic sections of the overall program for scientific and technical progress. Such a task as the study of the effect of the standard of living and workers' material well being on labor productivity and the efficiency of public production must be noted especially. For this purpose the appropriate economic-mathematical research must also be expanded.

In the final analysis it is necessary to develop such ways of improving the economic mechanism in the broad sense as organizations for social and economic development, which would maximally ensure the mobilization of intensive factors in economic growth.

It is necessary to change over to a specific methodological expansion of the principles of the system of optimum functioning of the economy into an interconnected set of proposals for an improvement in national economic management. At the same time, the turn to the formulation of practical proposals aimed at the optimization of the management system by no means signifies the slackening of attention to theoretical problems. Conversely, the problems of the practice of economic construction and their analysis and interpretation are a strong impetus for articulating and formulating new theoretical problems, for ranking them according to real importance and for checking the degree of scientific substantiation of advanced hypotheses.

Let us take the problem of the level of centralization of economic management. At first, when the theory of optimization of national economic management took only the first steps, it was a means, with the help of which it was possible to determine, up to the latest details, the optimum assignments for all and everyone. From today's standpoint the naivety of such very simplified ideas is evident. The extreme complexity and manysidedness of the goals and economic motivations of all the links of the social and economic system and the need for a search for means of an organic combination of general national economic and local interests under the conditions of operation of the socialist principle of distribution according to labor require the maximum possible realization of the principles of democratic centralism in economic planning and management. Therefore, in the last 10 to 15 years principal attention in the research of these problems has shifted to a search for the most efficient combination of a directive establishment of centralized planned assignments according to key, strategic economic indicators with the self-action and initiative of local economic units. Centrally established economic standards, that is, prices, rates of payment for the utilization of natural and labor resources and fixed capital, indicators of effectiveness of capital investments and so forth, play an important role in the solution of this problem. In connection with this in recent years matters concerning monetary circulation, finance and credit, as well as the balance of natural and monetary flows in the economy, have entered the field of vision of researchers engaged in optimization problems.

The formation of systems and sets of models of economic functioning, forecasting and planning now occupies an ever greater place in the work of the representatives of the economic-mathematical direction.

The substantiation of the nature and role of system modeling, by means of which qualitatively new scientific results and new knowledge of quantitative correlations and dynamics of and prospects for the movement of the modeled economic object can be obtained, is one of the urgent aspects of the further methodological development of the system of optimum functioning of the economy. In the practical field, however, the transition from the elaboration of individual models to the construction of their systems is a characteristic feature of the present stage in the development of economic-mathematical research. The advantages of such an approach are obvious: It makes it possible to minimize the volume of a priori set indicators and to more fully take into consideration direct and reverse connections and feedbacks among numerous economic variables.

In the last 15 years the Central Economic and Mathematical Institute, the Institute of Economics and Organization of Industrial Production, the Council for the Study of Productive Forces, the Scientific Research Economic Institute under the Lithuanian SSR Gosplan and other organizations have obtained a number of important theoretical-methodological results in the area of construction of systems of economic-mathematical forecasting and planning models and have performed a set of experimental calculations for a number of such systems. The indicated research has contributed primarily to the deepening of theoretical ideas of the national economic criterion of optimality and its inseparable connection with the processes of coordination of national economic and local economic interests.

Along with the elaboration of general problems of construction of national economic systems of models sectorial, regional and functional systems and sets of models have been developed. Models and methods of optimum development and placement of the production of individual sectors have found especially extensive practical application. A qualitative shift, that is, a transition to models of intersectorial complexes, has occurred recently. The inclusion in the sphere of optimization of connections and proportions among industries most closely linked with each other makes it possible to uncover major additional potentials for saving national economic resources. Research in the field of overall regional social and economic modeling has been intensified during the 11th Five-Year Plan. There are advances in the construction of subsystems of models for forecasting a rise in the people's well-being, movement of labor resources, nature utilization and so forth.

Many of the developed blocks of systems of models and their individual elements are introduced into the automated system of planned calculations (ASPR) and into a number of sectorial management systems.

At the same time, we must not fail to see bottlenecks and unsolved problems. At present standard systems of models leaning on sets of optimization problems are based, as a rule, on simplified and "ideal" notions of the system of functioning of the economic mechanism. It often remains unclear whether a given scheme of this mechanism is the best of the theoretically possible schemes, whether the economic motivations that within the framework of the indicated systems of models are a priori imputed to sectorial (and regional) blocks will be realized in practice and how the transition from an "ideal" to a real economic mechanism can be made. A more profound theoretical-methodological study of the possibilities of various schemes of economic mechanisms will make it possible to increase the adequacy of the systems of models to real economic processes.

A fuller consideration of the characteristics of the processes of reproduction inherent in its intensive type in economic-mathematical models and systems of models is an important problem in the improvement of many of them. The overwhelming part of the tools for modeling economic processes has been formed during the period of the primarily extensive development of the economy. The possibilities of these models in the description of the processes of introduction of the achievements of scientific and technical progress ensuring the saving of all types of production resources and their efficient mutual replacement, selection of the most efficient directions in the renovation of equipment and mechanization and automation of production, combination of these

processes with an improvement in the skills of personnel and transfer of workers among the spheres of application of labor and so forth, are very limited. Therefore, there is a need for a search for new methods of describing and modeling economic processes under the conditions of transition to the primarily intensive type of public production.

The nonuniform "mastering" of various spheres of the economy by the facilities of economic-mathematical modeling, especially in the area of construction of systems of models, should also be pointed out. At present there are certain achievements in the development of tools for modeling such intersectorial complexes as fuel-power, metallurgical, chemical, agroindustrial and transport complexes. However, construction and machine building complexes and most sectors of the nonproductive sphere have had much less "luck." In the field of regional modeling principal attention is paid to the investigation of macroeconomic and intersectorial proportions, fuel-power and agroindustrial complexes and problems of territorial production complexes. At the same time, complex regional problems of the production and social infrastructure and consideration of agglomeration effects have not been properly covered by research. Presently urgent problems of the reproduction of labor resources and overall problems of an interconnected modeling of the labor intensiveness of production, automation and mechanization of labor and training and retraining of personnel with due regard for the mobility of labor resources in territorial, sectorial and occupational terms require priority attention. Processes of formation of demand and consumption for material and spiritual wealth need a deeper understanding. Economic science experiences an acute need for the development of a special set of disciplines devoted to an analysis of the properties of large probability systems and theoretical principles of cybernetics and management. The increasing attention to the development of social and economic, along with production and technical, aspects of national economic management requires an ever fuller consideration of the probability nature of the economic system and, consequently, of the inevitable incompleteness of information utilized in decision making. The development of the indicated set of disciplines is a necessary condition for the study of integral systems including various functional problem aspects of research without dependence on the specific physical structure of these systems. Therefore, a fundamentally new stage in the integration of sciences, which differs from the preceding one, figuratively speaking, like multiplication differs from addition, is possible. This stage in integration will make it possible not to simply utilize the sum of knowledge accumulated in a number of special disciplines studying different aspects of functioning of the economic system, but to organize more efficient interpenetrating relations among them and to apply the methodology and methods of allied sciences for the synthesis of more common approaches to the study of traditional objects of analysis.

Apparently, the new approaches will lead to a significant rise in the level of adequacy of models and, consequently, will make it possible to more profoundly penetrate into the essence of the investigated processes.

The final result of any scientific development is determined by practice. For now a number of important, but particular, results have been realized.

The economic efficiency of application of mathematical methods and models in the national economy is well known. An experimental realization of many of them leads to multimillion figures of saving of capital investments and current expenditures. However, these methods and models have not yet been properly introduced. In a number of cases, for example, in sectorial long-term planning, today there are no objective obstacles to the utilization of economic-mathematical methods. Reliable methods and models have been developed and the necessary experience has been accumulated. It is time to make their application for ministries mandatory.

What are the further ways of introducing economic-mathematical methods into the practice of national economic planning and management? First of all, it is necessary to consolidate and develop the turn to social and economic problems that is taking shape, of course, without slackening attention to the production and technical aspects of an optimum distribution of resources and optimization of supply, freight transport and so forth--there is still a great deal of work here.

The combination of theoretical and basic with applied research will make it possible to effect in a more substantiated manner the practical transition from general theoretical propositions to practical recommendations for a system improvement in the planning and management of the socialist economy. An interconnected solution of these problems requires primarily the further development of the methodology of optimum planning at all the levels of the national economy and appropriate value mechanisms, of the system and structure of production management and of the general schemes and methods of decision making based on modern information systems and technical equipment of the management apparatus.

The problems of establishment and maintenance of the balance of national economic development are especially urgent. In connection with this economic science faces problems of a qualitative and quantitative analysis of all factors both those promoting and counteracting an efficient balance. Tools for economic-mathematical modeling necessary for this have now been developed. They make it possible to evaluate the quantitative correlations among various factors. However, their efficient application requires a unity of views among scientists investigating the qualitative nature of economic factors, on the one hand, and modeling specialists, on the other.

At this stage it is necessary to carry out the following:

analysis of different variants of economic mechanisms from the point of view of the possibility of utilizing them for the attainment of a coordination of interests at all the levels of the hierarchic economic system;

development of the principles of evaluation of the efficiency of economic solutions on the basis of the principle of national economic optimum with due regard for their effect on the state of balance;

investigation of the problems of coordination of the goal-oriented program method of solution of national economic problems with the balance, especially the intersectorial balance, method;

analysis of feedbacks existing in the economic system and capable of ensuring the stability of optimum states with regard to random disturbances;

further elaboration of the problem of measurement of expenditures and results both within the framework of the political economy of socialism and at a more specific level of improvement in the principles of a scientifically substantiated price formation.

The practical acuteness of the last problem is now due primarily to the fact that the policy of attainment of maximum final national economic results and reorientation of the entire incentive and cost accounting system toward them requires the development of strict, scientifically substantiated economic measurers. "Unfortunately, science has not yet suggested the necessary solutions of a number of important problems, which correspond to the principles and conditions of developed socialism, to practice," Comrade Yu. V. Andropov stressed at the June (1983) Plenum of the CPSU Central Committee. "What do I have in mind? Well, first of all, the selection of the most reliable ways of increasing production efficiency and the quality of output and the principles of a scientifically substantiated price formation" /Yu. V. Andropov, "Izbrannyye rechi i stat'i," Moscow, Politizdat, 1983, p 294/.

Naturally, the problem of measurement of expenditures and results cannot be considered only from the accounting and statistical aspect. It is primarily a problem of efficiency and, ultimately, optimization of managerial decisions. With regard to the problems of introduction of the ideas of optimum price formation into practice, here we must proceed from the fact that strictly optimum prices can exist only if there is a plan optimal from a formally mathematical point of view. Such plans do not exist in real economic life. It is not so much a matter of the level of scientific substantiation of plans not yet fully meeting today's requirements as of the impossibility of encompassing the entire diversity of a real object in a formal model describing it. Under these conditions the problem of the planned price should be essentially solved on the basis of a compromise, which envisages a modification of strict theoretical propositions derived from the generalized scheme of economic functioning as applied to a real economic situation.

The development of a system of national economic measurers of the final results of public production adequate to the conditions of developed socialism is among the most urgent tasks of economic science in this field.

The need for a decisive turn to the real practical tasks that life sets for our society also demands a new glance at the possibilities of development and introduction of systems of economic-mathematical models. From our point of view, the methods of their efficient application both in theoretical research and for applied purposes have not yet been exhausted.

Systems of models of the functioning of economic objects of all levels and the national economy as a whole describing a real occurrence of economic processes can provide considerable assistance in the analysis of the reasons for

the emergence of certain deviations from the envisaged planned assignments and in the disclosure of the motivations of enterprises, associations and departments leading to undesirable social and economic consequences. Experiments with these types of systems of models should become an integral part of the work on improvement in the system of national economic planning and management, because by means of them it is possible to study in a single complex all the aspects of interaction of the levers of planned effect on the behavior of economic objects, including the list of directly established planned assignments, contractual obligations, prices and norms of payments for resources, norms of deductions into the state budget and into enterprise funds, forms of organization and remuneration of labor, sanctions, fines and so forth.

Methods of imitation and econometric modeling will find ever greater application in the construction of such systems. The provision of research with reliable statistical, accounting, norm and planning information is an important condition for productive work.

The further development of methods of elaboration of an overall program for scientific and technical progress for a 20-year period represents an abundant field for an extensive utilization of facilities for the system modeling of social and economic processes. As is well known, it has been included in the state system of national economic planning in accordance with the Decree dated 12 July 1979 of the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Strengthening Its Influence on Increasing Production Efficiency and Work Quality." At present the development of the overall program for scientific and technical progress until the year 2005 is being completed and the preparation for its formulation for the period until the year 2010 is beginning. Of course, long-term forecasting methods should also be improved from stage to stage.

A set of national economic models (in particular, of intersectorial interactions) for determining the generalizing proportions of economic development and rates of growth of the output of material production sectors and for providing this growth with the necessary resources is right now quite extensively applied in the elaboration of the social and economic sections of this program. However, sufficiently reliable tools for the coordination of general national economic forecasts with regional and sectorial projections for scientific and technical progress are still absent. The efforts of the developers of systems of economic-mathematical forecasting models can be directed toward the solution of this problem.

Finally, as stated, the development of the automated system of planned calculations of the USSR Gosplan and the gosplans of the Union republics, as well as of automated management systems in ministries, departments, associations and enterprises, is the most important sphere of an extensive application of system modeling methods. However, we must not overlook the fact that a high degree of "technological nature" of the developed model tools, that is, their strict attachment to real schemes of planning and management and to the appropriate information systems and data bases, efficiency of calculations, clarity of presentation of their results and so forth should be the characteristic feature of the models designed for inclusion in the automated system of planned calculations and various automated management systems. Thus, on

the one hand, the role of planning-design engineering work far exceeding the limits of development of economic-mathematical models by the forces of scientists is very high here and, on the other, there are increased requirements for a realistic and reliable nature of the developed tools.

In this case a correct division of labor and an efficient interaction among scientists, planning engineers and direct users of economic-mathematical models are of special importance. Meanwhile, in contrast to some technical fields, sufficiently efficient forms of such an interaction have not yet been worked out.

An analysis of the traversed path and the experience in the experimental check and introduction of various methods of management, modeling facilities, the material incentive system and economic indicators of the evaluation of the economic activity of enterprises and associations indicate that all the work that has been done has prepared the possibilities for a transition to a qualitatively new stage in the realization of the party's strategic line for the improvement and development of methods of socialist production management. The problem of development of a long-term program for an overall improvement in the entire mechanism of management in the broadest sense, including planning, incentives, price formation, cost accounting, organizational structures, and the scientific and technical management base, is urgent. The specific aim of such a program should lie in the development of a management system fully adequate to the economy of developed socialism.

The achievements of economic science, including the results of economic-mathematical research, which have already undergone an experimental check, should be fully utilized and introduced into practice during the development of the overall program for an improvement in national economic planning and management.

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CSO: 1820/79

ECONOMIC MODELING AND COMPUTER TECHNOLOGY APPLICATION

MATHEMATICAL FORECASTING, PLAN MODELING DISCUSSED

Tallinn IZVESTIYA AKADEMII NAUK ESTONSKOY SSSR: OBSHCHESTVENNYYE NAUKI in Russian Vol 33, No 1, 84 (quarterly) (manuscript received 26 Apr 83) pp 1-7

Article by Yulo Ennuste, Institute of Economics of the Estonian SSR Academy of Sciences (presented by K. Khabikht): "Introductory Methodological Comments on Mathematical Forecasting and Planning of Adaptive Economic Development"

Text Methodological comments on the development of an improved mathematical description of the adaptivity of economic development in mathematical models are made in the article. In forecasting models this is to be done through the consideration of the manageability of economic development and in planning models, a more adequate description of the indeterministic aspects of economic development primarily on the basis of the consideration of incomplete and additional information. Such problems as the consideration of adaptivity during a forecast and of the adaptivity of the optimum plan, the methodology of improvement of stochastic optimization socioeconomic models through a description of the stochasticity of the structure of problems and significant events and the decomposition and coordination of stochastic problems are examined and, finally, comments concerning the system of models of indeterministic forecasting and planning are made.

1. Introduction

The need for a more adequate description of the adaptivity of economic development has arisen in the theory of economic-mathematical modeling. In forecasting models this means a more adequate description of the adaptability of the economy to new conditions and in planning models, the modeling of the adaptability of the plans themselves to heretofore unforeseen, new conditions. Thus, the concept of the modeling of adaptivity is used here in a broader sense than usual.

The need for a more profound investigation of the problems concerning the modeling of the adaptivity of economic development is due to the following circumstances: The generally accepted mathematical models of forecasting of economic development (trend and extrapolation) are based mainly on a description of the inertial aspect of development alone. Therefore, the area of application of these models is limited and an excessive inertia of plans can accompany the direct introduction of their results.

The traditional deterministic models of optimum planning also possess an inertial direction. They proceed from the deterministic prerequisite for the existence of full information and, therefore, the adaptability of plans and the ideas of their preliminary nature and flexibility are fundamentally alien to them. Furthermore, owing to the noted features, the tendency toward their application for too long planning periods is manifested, the significance of sliding planning is underestimated and so forth, which leads to inefficient results. For these reasons the existing theory of optimum planning does not meet many practical requirements, in particular the correction and maneuvering of plans /1/, creation of reserves, diversification and so forth.

This article makes an attempt to uncover certain methodological aspects of mathematical modeling of the adaptivity of economic development, which are primarily connected with the lack of completeness of information and with the indeterminacy of economic development. At the same time, it is assumed that the indeterministic (stochastic, diffuse, with interval data and so forth) dynamic model of optimum sliding planning, where planning indicators can also be indeterministic (distributions, intervals and so forth), is a suitable apparatus for a mathematical description of the adaptivity of economic development.

2. Particular Models of Forecasting and Planning of Adaptive Economic Development

In order that mathematical forecasting models may describe, along with inertial aspects of economic development, adaptive aspects, it is necessary to more fully take into consideration the effect of planning and management /2, 3/. Therefore, alternatives, plans and goals of development should be forecast in these models. Depending on the method of application of the latter a dual approach--normative and descriptive--is possible. In the first case the forecast goals are normative and in the second they are extrapolations of existing goals.

It is easily seen that with such an interpretation the forecasting model approaches the planning model significantly, because it describes goals and plans, as well as choice alternatives. When constructing the model, it is necessary to supplement the internal statistical information of an object with external information as well /3/. However, in contrast to the planning model, planning indicators are only informative (not directive) here and are described indeterministically (random and diffuse variables, intervals and so forth). Such models are called hybrid, because both mathematical statistics and the theory of probability, as well as elements of optimum planning, are combined in them.

In contrast to traditional models the forecasts obtained by means of the described models are not limited to the determination of development problems, but also give their solution.

With regard to traditional extrapolation forecasting on the basis of trend regression functions, here the excessive inertia of a forecast lies in the following: The type of the trend regression function is determined only on

the basis of information of the time series. Here it is advisable to supplement this information with external information. The latter, for example, can consist in directives or in some meaningful asymptotes, which can limit or adapt the further development of the process.

For an adequate description of indeterministic dynamic planning problems it is necessary to take into consideration additional information, which can be received both from outside and in the course of the coordination process from inside the planned system itself.

Proceeding from these principles, it is advisable to definitively fix the plan only for the beginning of the planning period and for a certain subperiod $\frac{1}{4}$. The planning indicators of the next subperiod are represented as preliminary (with respect to incoming additional information), taking the form of laws of distribution, intervals or point evaluations. The possibility of finding additional information and the calculation of the expenditures connected with it transform such characteristics of the planning model as the length of the planning period and its sliding step, the plan fixing time, the volume of additional information and so forth into optimum characteristics.

The plan flexibility is connected with the aggregation of planned information. On the basis of this feature rigid and flexible plans are distinguished. For example, the flexible plan is given by an interval or distribution. Both the preliminary nature and flexibility of the plan pertain to optimized parameters. The corresponding optimization problem should take into consideration the expenditures or losses connected with the measure of flexibility, on the one hand, and the effect from a freer determination of plans at the lower levels of planning systems, on the other.

On the basis of the formulated features it is possible to describe four plan categories, which are represented in the table.

Plan Categories

	Final	Preliminary
Rigid	0 determined plan	I forecast plan
Flexible	II flexible plan	III flexible forecast plan

The zero category plan is not adaptive, while the other three are. At the same time, adaptation with respect to the information that will be received in the future occurs in the horizontal direction of the table and with respect to the loss of information arising during the aggregation and detailing of data, in the vertical direction.

By means of adaptive plans it is possible to avoid an excessive rigidity of planning and thereby to lower the effect of unforeseen or indeterminately forecast negative events and to more fully utilize unforeseen favorable factors.

Various theories have been developed for a formalized description of indeterministic optimization problems /5/. Stochastic optimization, diffuse optimization, optimization with interval data and the minmax theory are the most widespread. Stochastic optimization can be considered the most general and adequate for a description of socioeconomic problems /6/. To date the basic shortcoming of this theory lies in the relative complexity of both the solution of problems and the collection of data (distribution laws). Therefore, preference is often given to simpler models based on the other above-mentioned theories, although stochastic optimization is the most sensitive and adequate means of describing indeterministic socioeconomic problems.

It must be noted that many phenomena significant from the point of view of socioeconomic objects lend themselves with difficulty to a description by traditional stochastic models. They include the mutual stochastic dependence of the object's parameters and the discontinuity of their change. For a simplified description of these phenomena it is advisable to use the concepts of significant events /5/ and of the stochasticity of the model's structure /7/. By a significant event we mean an event, on which the other events and, thereby, the laws of their distribution depend. Thus, by means of significant events we can create models, which take into consideration to some extent mutually dependent parameters. For an approximate description of the discontinuity of their change it is convenient to use the concept of the stochasticity of the model's structure. The idea lies in the assumption that the model's structure depends on random circumstances and, consequently, is a probability structure (together with the probability nature of the model's parameters). In many cases methods of imitation and decomposition are suitable for an analysis of such complex stochastic models, as well as for an approximate solution of numerical problems.

3. Methodological Elements of Systems of Models of Adaptive Economic Development

Decomposition methods are of special importance in the investigation of the principles of coordination of indeterministic models of forecasting and planning of adaptive development. For example, in the decomposition of the stochastic model of optimum planning it is easy to form two submodels of the system: One is a planning model, whose planning indicators are final and the other is a forecast model, whose planning indicators are preliminary and must be solved in stages.

The advisability of application of adaptive coordination /8/, which in this model is effected through the use of the laws of distribution of the probabilities of coordinating parameters (for example, prices), follows from the decomposition analysis of two-stage stochastic optimization problems. At the same time, it is clarified that in adaptivity optimum coordinating parameters exceed planning parameters /8/. In this case final plans are coordinated by means of preliminary coordinating probability parameters.

Decomposition methods, which decompose a problem on the basis of the aspect of inertia of economic development and the aspect of adaptivity, are of special interest from the point of view of the examined subjects. Such a decomposition makes it possible to examine within the framework of an interconnected

system both inertial and adaptive models and to understand well the place of various interpretations [3]. At the same time, it is possible to clarify that inertial models are used basically at the initial stages of forecasting, for example, in the forecasting of limiting factors, parameters and connections of the most complex adaptive models and so forth.

The formulation of a sufficiently general forecast-planning model (so-called initial model) and its decomposition analysis are some of the ways of a system investigation of the mentioned problems. On the basis of such an analysis it is possible to construct different variants of simpler systems, as well as of simplified particular models and the mathematical principles of their coordination.

For a schematic example we will presuppose that the indeterministic multi-stage optimization model is quite adequate and general for the forecast-planning calculations of the socioeconomic development of a region. It should contain rigid final planning indicators for the beginning of the period and flexible preliminary planning indicators for later stages, as well as take into consideration future potential technological alternative and stochastic relations of parameters. It is obvious that such a model will be exceedingly complex and at present there is no general formalized theory of its description. Presently existing formalized theories have a number of shortcomings from the point of view of the problem raised by us. Thus, on the basis of the theory of stochastic programming it is possible to solve only extremely simplified problems, because great difficulties arise in the consideration of stochastic relations of parameters. Diffuse (blurred) optimization is now only at the stage of formation and the rules of description of interconnections of parameters are not yet known here. Excessive pessimism (maxmin principle) is characteristic of the game theory and of the theory of interval optimization. For the purpose of a more adequate formulation of the model it is necessary, when describing it, to use combinations of the mentioned theories. Apparently, a formalized description of the model will be extremely complex. Therefore, within the framework of the schematic example we will confine ourselves to the foregoing verbal description, as well as to a logical-verbal analysis of this initial model.

There are different possibilities of decomposition of the described initial model. For our purposes it is advisable to use a combination of several principles and types of coordination. We will begin with decomposition in time: The model of the first subperiod contains planning indicators and the model of the second subperiod, forecasts of planning indicators. Thus, we will decompose the complex forecast-planning problem into simple forecast and planning problems. In turn, the forecast problem should be investigated in terms of inertial and adaptive aspects. To obtain purely inertial aspects, we disengage ourselves from goal indicators, manageability and external information. As a result, we obtain econometric extrapolation models. If there is a need for a further simplification, we disengage ourselves from the system nature of indicators and obtain individual multifactor regression models of socioeconomic indicators. Finally, the aggregation of factors into one factor--time--which will give us trend models, remains the last possible simplification. Usually, the formulation of forecasts of economic indicators begins from the latter.

Goal indicators, forecast-planning indicators and external information play an important role in the models of forecasting of adaptive aspects of socioeconomic development.

As practice shows, the models of the subperiod of planning of the overall socioeconomic development of a region are also too complex and information-intensive to solve them in one center. These models should also be first decomposed in terms of such aspects as models of sectorial structures, territorial models (models of subregions), models of technological development programs, nature utilization programs and so forth. In turn, all the above-mentioned particular models, usually, are subject to decomposition in terms of sectors and resources.

It should be added that the foregoing schemes of decomposition of the initial problem not only simplify its solution, but also make it possible to bring particular models closer to information sources and thereby to avoid an excessive distortion of information.

As yet the principles of coordination of such systems of forecast-planning models are little investigated. The principles of coordination of deterministic systems without aggregation can now be considered more or less developed. Only the first steps have been taken in the area of investigation of aggregate coordination and coordination with incomplete information. As has already been stated, in stochastic models coordination should be adaptive. In case of application of systems, at the highest levels of which more aggregate models operate, initial indeterminacy is aggravated by a loss of information, which is connected with aggregation. From this it follows that aggregation, in turn, should increase the flexibility of coordination and even in deterministic models coordination should be flexible.

4. Some Conclusions

1. The assumption on the completeness of information is a strong simplification in the deterministic mathematical theory of socioeconomic development. For this reason important problems connected with incomplete and additional information existing in reality are excluded from the examination. In planning this theory often leads to a premature fixation of plans and to their excessive rigidity and in forecasting, to a limitation to external statistical information of the investigated object alone. In general the mentioned deterministic theory focuses attention on the inertial aspects of socioeconomic development, but does not sufficiently take into consideration the adaptive aspects of development and the positive aspects connected with them. In this sense the possibilities of application of the deterministic theory are limited.

2. A more general and adequate mathematical theory of socioeconomic development requires a transition to indeterministic models. At the same time, the concepts of forecasting and planning of adaptive development play an important role. Adaptive development implies a plan, which, in principle, takes into consideration the possibilities of input of additional information and the possibilities of its utilization. This is attained by such plan characteristics

as preliminary nature and flexibility. At the same time, preliminary nature takes into consideration the input of additional information only in time and flexibility, in space, in hierarchy, in planning and so forth.

3. In methodology a transition to an adaptive concept is connected with significant changes both in forecasting and in planning. In forecasting, along with inertial aspects, it is necessary to take into consideration the manageability of development and, consequently, both the goals and external limitations of development. Multistage indeterministic models with adaptive plans, which are used in a sliding mode, are predominant in the area of planning methodology. For the coordination of plans and forecasts it is necessary to change over to an adaptive concept, whose idea lies in connecting coordinating parameters with realized conditions.

4. A decomposition analysis of a general indeterministic forecast-planning economic problem with adaptive plans gives a logical concept of the corresponding systems of models. Such concepts facilitate the integration of applied planning and forecast models into a single system and help to understand the functions of individual models in such systems. It turns out that a decomposition-coordination solution of indeterministic optimization problems is an extremely complex and as yet little investigated problem. Problems of flexible coordination and aggregate coordination, as well as their combinations, require a further investigation.

5. Evidently, hybrid models, in which the principles of econometric and optimization approaches will be used in a combination, will become the basic mathematical apparatus of forecasting of adaptive development. The theory of stochastic optimization is more adequate for a mathematical description of planning models. However, this theory should also be improved for the purpose of adapting it to a given object. For example, here it is advisable to take into consideration not only the stochasticity of the parameters of models, but also the stochasticity of their structures.

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CSO: 1820/86

REGIONAL DEVELOPMENT

MOLDAVIA'S FUNCTION AS INTEGRAL PART OF SOVIET ECONOMY VIEWED

Kishinev KOMMUNIST MOLDAVII in Russian No 12, Dec 83 pp 56-61

[Article by Doctor of Economic Sciences A. Kozhukhar': "Economy of the Moldavian SSR--a Composite Part of the Unified National Economic Complex"]

[Text] One of the most important features of a developed socialist society's economy is the establishment of a unified national economic complex (YeNKhK), which includes economies of all republics and economic regions of the country. This is an important step along the path of practical realization of V. I. Lenin's idea on transforming the future economy into a unified factory and the entire society into a unified cooperative of workers (see "Polnoye sobraniye sochineniy" [Complete Works], Vol 33, p 101; Vol 37, p 346). The fact of establishing a unified national economic complex of the country is secured in the USSR Constitution: "The economy of the USSR is composed of a unified national economic complex, which includes all links of social production, distribution and exchange in the territory of the country" ("Konstitutsiya (Osnovnoy Zakon) Soyuza Sovetskikh Sotsialisticheskikh Respublik" [Constitution (fundamental law) of the USSR], Moscow, 1977, p 11).

It is proposed that the study of this subject be divided into the following three questions:

1. The essence of a unified national economic complex.
2. The place of Moldavia's economy in the system of a unified national economic complex.
3. Economic cooperation of Moldavia with union republics and CEMA countries.

In examining the first question it is necessary to concentrate attention on characteristics of the basic signs of a unified national economic complex, which define its essence. The main ones are:

first, public ownership of the means of production, the high level of socialization of production and the development of a system of public division of labor. The latter is characterized by a complex sectorial structure of economics. The relative share of sectors of the nonproductive sphere increases in the system of public division of labor. In 1981, 26.3 percent of all workers and 33.6 percent of all national economy funds were used in it;

second, orientation of the economy toward ensuring a steady upsurge in the material and cultural level of life of the people on the basis of further raising the efficiency of all social production and converting it to a primarily intensive path of development, dynamic and balanced development and proportional growth of sectors of a unified national economic complex and economies of union republics and carrying out a unified socioeconomic and scientific-technical policy of the CPSU;

third, formation of intersectorial and regional complexes in the structure of a unified national economic complex: territorial-production complexes and intersectorial--agro-industrial, investment, transportation, fuel and power and other complexes--which will include a large number of sectors of the national economy that have stable economic ties;

fourth, implementing progressive shifts in the structure of the national economy, improving intersectorial and intrasectorial proportions with the aim of eliminating existing distinctions in the technical and economic and socioeconomic levels of development of regions and achieving economic equality and social uniformity of various regions;

fifth, establishing a unified system of a production infrastructure in the composition of a unified national economic complex (this applies to unified systems such as power, transportation, gas supply, automated communications and other systems); and

sixth, deepening of the international socialist division of labor and developing new forms of economic cooperation of the socialist countries (scientific and technical cooperation, foreign trade, joint construction and operation of enterprises and specialization and cooperation of production on the basis of coordinated long-term programs), which promotes strengthening of interaction of our country's unified national economic complex with national economic complexes of other fraternal countries.

It is important to emphasize that during the stage of mature socialism, a unified national economic complex develops on its own basis and is directed toward achieving a greater balance of various links of the national economy, equalizing technical, economic and social levels, converting production to a primarily intensive path of development and more fuller orientation of all production links toward realizing the highest goal of socialist production.

In studying the second question of the subject special attention should be devoted to the following aspects: organic interaction, the unity of a unified national economic complex and complexes of union republics, the place of Moldavia's economy in the system of a unified national economic complex, the characteristics of the complex of basic sectors, agro-industrial complex of the republic and the complex of sectors which produce consumer goods.

One of the most important laws governing the development of a unified national economic complex is the strengthening organic unity of the country's national economy and the economy of union republics.

Moldavia's economy, as a structural subdivision of the unified national economic complex, has now been transformed into a national economic complex, which occupies an important place in social division of labor and makes an increasingly important contribution to the country's national wealth. The basic signs of the country's unified national economic complex are also present in the republic's national economic complex.

The idea of comprehensive development of the economy of economic regions was advanced for the first time in 1920 in the plan of the State Commission for the Electrification of Russia [GOELRO]. The necessity of comprehensive development of regions was emphasized by V. I. Lenin in 1921 in his work "O prodovol'stvennom naloge" [On the Food Tax]. In it he demanded from regional and local organizations "... an exemplary organization of the small 'whole,' but precisely 'whole,' that is not a single economy, not a single sector of the economy, but the sum of all economic relations, the sum of the entire economic turnover, even of a small region" (Complete Works, Vol 43, p 234). Lenin's ideas of comprehensive development of the economy of economic regions found concrete embodiment in the establishment of regional national economic complexes.

It must be noted that every national economic (regional) complex interacts with the country's unified national economic complex.

The basic directions of interrelationship and interaction between a unified national economic complex and republic national economic complexes are, first of all, the strengthening of organic unity of the country's unified national economic complex and specialization of a regional national economic complex; increasing contribution by economic regions to effectiveness of the country's unified national economic complex, ensuring on this basis a balanced nature of economies of republics and equalizing levels of their development; second, improving intereconomic relations with the aim of more rational and efficient utilization of material, labor and financial resources that are directed at converting the economy to a primarily intensive path of development; third, more fuller consideration of specific conditions in the development of economy and population's demands in a region for consumer goods; and, fourth, efficient utilization by every republic of its natural factors in accordance with all-union division of labor. "The most judicious utilization of the natural and labor resources and climatic specifics of each republic and the most rational inclusion of this potential into that of the union as a whole," Comrade Yu. V. Andropov stressed in his report "The 60th Anniversary of the USSR," "is what will yield the greatest benefit to each region, to each nation and nationality and to the state as a whole."

The overall sense of purpose of production specialization and comprehensive development of the economy and strengthening of interregional economic relations determine the place of each republic in the system of a unified national economy complex and its role and significance in satisfying local and all-union requirements.

Moldavia's economy as a composite part of the country's unified national economic complex is defined by three groups of sectors.

The first group consists of sectors of union specialization, whose production is earmarked mainly to satisfy all-union requirements. In Moldavia such sectors are agriculture (horticulture, viticulture, vegetable raising, tobacco cultivation and the raising of sugar beets, sunflowers and essential oil-bearing crops) and the food industry (wine making, canning, tobacco, sugar, fats and oils and essential oil). It is precisely this group of sectors that represents Moldavia in the all-union division of labor and defines its place, role and contribution to the all-union economy.

Sectors of union specialization, whose production is used within as well as outside the region, also belong to this group. Among such sectors in the republic are machine building and some production facilities of the chemical and light industry, which operate on imported raw materials and cooperative supplies and make up units, components and finished articles.

Belonging to the second group are sectors whose production is used for consumption within the republic. Included in them are some production facilities of the light and local industry as well as enterprises which use raw material and fuel resources of local significance and by-products of basic production of sectors of union and regional specialization.

The third group includes sectors of physical production, which are called upon to ensure normal functioning of all sectors of the republic national economic complex, that is of the production infrastructure (transportation, road management, the construction materials industry and others).

Proceeding from the level of development of production forces, the following structural subdivisions can be singled out in the republic national economic complex: a complex of basic sectors of the industry, an agro-industrial complex and a complex of sectors engaged in the production of consumer goods.

The first includes power engineering, metallurgy and machine building. Separately, each sector, based on its functional purpose, appears as a sort of integrated subdivision. The power engineering complex ensures electric and heat energy requirements of all sectors of physical production and nonproductive sphere. In 1982, the power engineering complex generated and supplied for production and municipal and everyday needs 16.8 billion kW-hours of electric energy and nearly 7 million gigacalories of heat energy.

Moldavia's power engineering complex is included in the unified power system of the USSR as a structural element of the country's fuel and power complex.

In connection with gradual conversion of the republic's economy to a primarily intensive path of development and increased needs of the national economy in ferrous metallurgy production, the significance of metallurgical industry in the composition of basic sectors is growing. Construction is underway in Rybnitsa of the Moldavskiy Metallurgical Plant, which will ensure utilization of all local scrap metal, substantially reduce its delivery to the republic and economize transportation means and other material resources. The first stage of the plant will be put into operation as early as 1984.

Machine building sectors occupy a significant place in the complex of basic sectors. Belonging to this complex are the Moldavgidromash and Vibropribor production associations in Kishinev, the foundry machine plants imeni S. M. Kirov and Moldavizolit in Tiraspol, the Moldavkabel' plant in Bendery and other machine building enterprises, which produce electric machines and motors, power transformers and low voltage electrical engineering instruments, electrical engineering equipment and cable goods, press forging machines and foundry production equipment and various devices and means of automation. At present, subdivisions of the complex ensure 7 percent of the all-union production volume of large electric machines, 7.7 percent of alternating current electric motors, 4.8 percent of electric measuring instruments and 3.5 percent of instruments for measuring mechanical values. More than 95 percent of all production comes into all-union turnover.

The machine building complex continues to develop in the 11th Five-Year Plan. In 1983, construction and increase of capacities continued at the Plodsel'khoz-mash Production Association [PO] in Kishinev, at the Moldsel'mash Production Association in Beltsy, the Foundry Machines Plant imeni S. M. Kirov in Tiraspol, the Volna Production Association and the Calculating Machines Plant imeni Pyatidesyatiletie SSSR in Kishinev and at other enterprises.

One of the central places in Moldavia's national economic complex is occupied by the agro-industrial complex. Its share at present accounts for 57 percent of fixed production capital, more than 48 percent of the total number of workers employed in the national economy, 60 percent of total social product and 54 percent of the republic's national income.

The agro-industrial complex of Moldavia is developing in many directions. First, further deepening of zonal specialization is underway, which is aimed at rational use of natural conditions and resources; second, state, kolkhoz and inter-farm specialized enterprises of the industrial type are being established in crop-growing and livestock breeding; and, third, the process of further internal economic specialization and concentration of production and improvement of economic relations in the agro-industrial complex [APK] is continuing.

The complex consists of three spheres of social production: production of means of production of agricultural purpose, strictly agricultural production and production of sectors linked with procuring, transporting, processing, storing and marketing agricultural production.

The first sphere of the agro-industrial complex--production of means of production of agricultural purpose--has a tendency toward expansion and is meant for implementing comprehensive mechanization of basic processes in the agro-industrial complex. It consists of some enterprises engaged in the production of agricultural machines.

The current material and technical potential of the republic's agriculture consists of more than 50,000 modern tractors, over 11,000 combines and nearly 33,000 trucks and other equipment. The republic has established a high-capacity material and technical base of livestock breeding. It has constructed and

put into operation 41 pork production complexes, 33 beef production complexes, 35 heifer farms and 30 poultry farms. Their planned capacity makes it already possible now to annually produce nearly 200,000 t of meat, to obtain 500 million eggs and to raise 55,000 head of non-calving young cows.

The core of the agro-industrial complex is the second sphere--agricultural production. Moldavia's agriculture occupies an important place in the agro-industrial complex of the country. During the 1976-80 period, it produced 3.3 percent of the all-union gross production volume of crop-growing and 1.4 percent of livestock breeding production, including 22 percent of grapes, 8.6 percent of fruits, 4.4 percent of vegetables, 5.2 percent of sunflowers, 3.5 percent of sugar beets, 1.7 percent of meat, 1.2 percent of milk and 1.3 percent of eggs.

The basic direction in the development of the republic's agriculture was defined by the 26th CPSU Congress and defined more precisely by the May (1982) plenum of the CPSU Central Committee in the "Food Program of the USSR for the Period up to 1990." It contemplates deep specialization of regions and farms in the production of fruits, especially of stone fruit crops, vegetables, grapes and hybrid seeds of corn and sunflowers as well as production of seeds and livestock breeding products.

An important place in the agro-industrial complex of the republic is occupied by sectors of the third sphere, which are engaged in the processing of agricultural production. It consists of nearly 20 subsectors, includes more than 200 enterprises and associations and produces more than 1,000 different types of foodstuffs valued at more than R3 billion.

A great role in the republic national economic complex is played by a complex of sectors engaged in the production of consumer goods. It includes enterprises of the light, local and wood processing industries, the construction materials and forestry industries, social security, housing and municipal services and consumer services as well as industrial enterprises under union jurisdiction which produce consumer goods. In 1982, R3.1 billion worth of them were produced in the republic. A total of 1,427 articles are produced with a state mark of quality. Their relative share in the overall volume of consumer goods amounts to 32 percent.

It should be noted that despite a considerable increase in the production of consumer goods during the past few years, the demand for many of them is not being fully met. At the same time, many articles are kept for a long time on the shelves and accumulate in trade. They are mainly obsolete models and designs which do not satisfy customers, are not reliable in work and have been poorly made. For example, every third color television set has to undergo warranty repairs. Large quantities of footwear, cultural and personal goods, sewn goods and other articles are being rejected.

Individual enterprises in the republic, which produce consumer goods, have been slow in reorganizing to production of quality goods. There have been instances when supervisors of some enterprises in trying to fulfill their plans in rubles strived to produce more expensive articles and avoid production of cheap goods which enjoy increased demand.

"Increasing production of consumer goods and expanding the sphere of services in combination with the Food Program are a central part of the social program confirmed by the 26th CPSU Congress and must be of urgent concern of all party, soviet and trade union organs and all ministries and departments. For rapid saturation of the market with commodities, each sector of physical production and every enterprise, regardless of their specialization, must contribute their share to the replenishment of commodity resources," notes the resolution of the CPSU Central Committee and the USSR Council of Ministers "On Additional Measures for Improving Supply to the Population of Consumer Goods in 1983-85."

The republic has worked out a comprehensive program for developing production of consumer goods in the 11th Five-Year Plan and in the period up to 1990, which is a composite part of the all-union program. Dynamic development of the republic's national economy and of its structural subdivisions contributes to the establishment of necessary prerequisites for further raising the well-being of workers.

In examining the third question attention should be devoted to the following two aspects: Moldavia's economic cooperation with other union republics and its participation through the unified national economic complex in the international socialist division of labor.

One of the most important features of a unified national economic complex is economic cooperation and systematic distribution of produced goods among union republics and regions according to their specialization and requirements of comprehensive development of their economy. Within the framework of the country's unified national economic complex, Moldavia exchanges receipts with all union republics. It receives production of 93 sectors from other union republics and in its turn supplies products for 72 sectors.

According to the data of intersectorial balance, Moldavia receives: from the RSFSR--excavators, bulldozers, motor graders, rollers, loaders, chemical equipment, overhead and tower cranes, motorboats, refrigerating plants, compressors, steam boilers, diesels and diesel generators and pumping stations; from the Ukraine--rolled ferrous metal, pipes, metalware, various electric motors, compressors and refrigerating plants; from Belorussia--industrial equipment, tractors, computer equipment, lumber and cardboard; from Uzbekistan--metal, industrial equipment, monitoring and testing instruments for the light industry, wool yarn, raw leather and wool; from Lithuania--electrical engineer and cable goods and construction materials; from Latvia--cardboard, paper, tools, radio goods and office devices and equipment; from Azerbaijan--petroleum products; and from Armenia--computer and electronic equipment. Various industrial production and raw materials are also supplied by other union republics and regions of the country.

At the same time, Moldavia, in its turn, supplies to other republics in the country products of the food and light industry, machine building, instrument making and electrical engineering. Within the framework of the country's unified national economic complex, Moldavian goods are exported to Bulgaria, Hungary, the GDR, Cuba, Poland, Czechoslovakia, Romania, Mongolia, Great Britain, Denmark, Italy, Canada, France, the FRG, Sweden, the Netherlands and

some developing countries. Enjoying priority demand in these and other countries are articles of the machine building and tool making industries, electric power, construction materials, consumer goods, foodstuffs, fermented tobacco, wines and other goods.

In accordance with the directions of specialization within the country's unified national economic complex, the relations of industrial enterprises of the MSSR with enterprises of foreign countries are being expanded. Thus, for example, good production relations have been established between the collectives of the Kishinev and Kralovskiy (Bulgaria) tractor plants, the Kishinev Elektromashina Plant and the (Vashgeretwerk) people's enterprise in the GDR, the Floare Production Association in Kishinev and the Intra enterprise (GDR), the related enterprises of Yuzhenergoremont and Erikor (Hungary), the Moldav-kabel' plant in Bendery and the Bulgarian plant imeni Nenko Iliyev, the Moldavgidromash Production Association and the (Pumpenwerk) combine (GDR) and many other industrial enterprises of the republic and the socialist community countries.

Taking specialization into consideration, the republic has established a leading special design buro [GSKB] on complexes of machines for mechanization of work in orchards, vineyards and small fruit patches. Soviet scientists together with their foreign colleagues are working on designing new machines for the agrarian sector, breeding new varieties and hybrids of agricultural crops and technologies of their production, breeding new varieties of grapes that are resistant to cold and diseases, hybrids of early ripening tomatoes and new varieties of vetches, peppers, onions, sunflowers and soybeans and on developing a new technology for growing plums and apricots.

The level of development of Moldavia's economy and the degree of its maturity is determined in the end by the the extent that it, proceeding from the directions of specialization and its place in the all-union division of labor, satisfies the requirements of the unified national economic complex and the republic. Fuller and more rational utilization of natural-climatic, material and labor resources will make it possible to raise its role and significance in the system of the unified national economic complex.

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